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In This Issue...

Research Trends In Executive Behavior
By Chris Argyris

Promotional Practices For Technical Men
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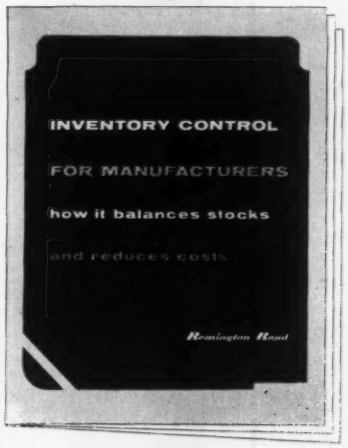

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THURSDAY APRIL 26

Morning

• Operations Research

PRINCIPLES OF OPERATIONS RESEARCH
Herbert H. Jacobs, Asst. Professor, Industrial Engineering Dept., Columbia University, New York City

MAKING USE OF OPERATIONS RESEARCH
Morley G. Melden, Assoc. Ed., "Factory Management and Maintenance," McGraw-Hill Publishing Co., New York

• Material Handling

RELATIONSHIP OF PLANT LAYOUT TO MATERIAL HANDLING
James M. Apple, Professor, Industrial Engineering, Michigan State University, East Lansing, Michigan

FACTORS IN EQUIPMENT SELECTION
Charles S. Schroeder, Dir., Research and Development, Yale & Towne Mfg., Co., Philadelphia

Luncheon

THE ROLE OF EDUCATION IN DEVELOPING MANAGEMENT KNOW-HOW
Dr. Gaylord P. Harnwell, President, University of Pennsylvania, Philadelphia

Afternoon

• Maintenance Control

MAINTENANCE PERFORMANCE CONTROLS
Oliver S. York, Group Supervisor, Engineering Dept., E. I. duPont de Nemours & Co., Wilmington, Delaware

UNIVERSAL MAINTENANCE STANDARDS
Charles F. Stephenson, Chief Indust. Eng., Commercial Division, York Corp., York, Pa.

• Advances in Information Analyses

INFORMATION FLOW ANALYSIS
Adrian McDonough, Director, Taylor Management-Laboratory, Wharton School, University of Pennsylvania, Philadelphia

EVOLUTION OF A COMPUTER APPLICATION
Richard E. Utman, Data Processing Manager, Southern California Divis., Stanford Research Institute, Los Angeles

FRIDAY APRIL 27

Morning

• Work Measurement

AUTO-MEASUREMENT — MECHANIZING TIME STUDY
Charles W. Lake, Jr., V. P., R. R. Donnelly & Sons, Chicago

PHYSIOLOGICAL TECHNIQUES IN WORK MEASUREMENT
Lucian Brouha, M.D., D.Sc., Haskell Laboratory, E. I. duPont de Nemours & Co., Wilmington, Delaware

• Applied Automation

A CASE HISTORY
Damon Van Utt, Vice President, Bruce Payne & Associates, Westport, Conn.

APPLIED AUTOMATION AT THE PLYMOUTH ENGINE PLANT
Carl Demrick, Vice President in Charge of Manufacturing, Plymouth Div., Chrysler Corp., Detroit

Luncheon

MANAGEMENT—WHERE ARE WE GOING?
Joseph L. Kopf, President, Jabez Burns & Sons, New York City

Afternoon

• New Approaches to Cost Reduction

COST REDUCTION THROUGH SCHEDULING
Alex Proudfoot, Specialist in Scheduling Installations, Chicago

A COSTMATICS PROGRAM FOR COMPETITIVE MANAGEMENT
Ernest Schleusener, Vice President, Mfg., Mueller Brass Co., Port Huron, Michigan

• Improving Operating Decisions

QUALITY CONTROL THROUGH INSTRUMENTATION
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CONTENTS

Dictatorship By The Consumer 5
by F. F. Bradshaw

Research Trends In Executive Behavior 6
by Chris Argyris

Promotional Practices For Technical Men 10
by Eugene J. Benge

Why So Many Corporate Mergers? 13
by Emanuel Rapoport

Theme and Committee of the 11th Annual Management Engineering Conference 16

Mergers And The Antitrust Laws 18
by Malcolm A. Hoffmann

New Management Writing 22
The Golden Book Of Management — An Historical Record of the Life and Work of Seventy Pioneers
A Review by Rita Hilborn Hopf

The Last Twenty Years In Management 24
by B. E. Goetz

Chapter Activities 28

Professional Notices and Classified Advertising 30

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Dictatorship by the Consumer

WE have heard a lot of words, in the last half century especially about dictatorship by the worker, we have heard also about Fascist dictatorship, Nazi dictatorship, and every now and then somebody says something about Capitalist domination and "ruling circles of Wall Street."

We might as well start out by admitting that rarely do the millions of people in a country all actively participate every day is determining the course of their collective lives. Always there are people who govern for the balance, or at least they govern the balance; there may be a question whether they govern for, or not. In other words, inevitably, in accordance with the division of labor, some people do the governing and the rest of us most of the time leave it up to them and substantially guide ourselves by their rules and regulations.

Theoretically, at least, when elections come around everybody actually participates and, therefore, although we obey our governors in the meantime, we select them at election time. As a matter of fact, however, frequently many people do not vote at all and a lot of these who do vote have their vote influenced by informal leaders or self-constituted pressure and propaganda groups. Except in great upheavals, when the issues are so dramatic as to mobilize practically everybody into changing or selecting a government, we not only do not govern ourselves but we don't all participate in selecting those who do.

Probably, then, the most important determiner as to how a nation runs is the make-up of the self-constituted groups which constitute the government, visible or invisible, which not only run the country in between elections, but influence elections. It is a familiar fact, even in the most democratic countries, that a self-constituted party of some make-up or other persuades, or confuses, or sometimes compels the rest to put them in power. Policy of the nation will then inevitably follow from the nature of this self-constituted and possibly invisible group. Now, what is the nature of this group in the United States? A good friend of mine, who was originally a native of Scotland and learned the ways of capitalism in the Bank of Scotland, has frequently pointed out that in this country we should be very careful how, in communications with Europe and Asia, we use the word Capitalism. He contends that in those other countries the word means something so different from what it means here that we confuse our hearers and bring upon ourselves public relations problems from which we could better be spared and from which we are properly entitled to be spared. His further discussion of the question points up this kind of basic contrast. Frequently, the word Capitalism has meant an economy in which a relatively few owners of the tools of production, by combining themselves into cartels in restraint of trade, were able to keep wages down and prices up to the enrichment of themselves and the partial stagnation of the economy. One accompaniment of this activity is relatively to freeze people in the social economic class in which they are born and reared. Obviously, this kind of Capitalism holds out little hope for the future to the great masses of people under it.

Contrast, he says, the pattern in the United States of America. Here, however much influence the owners may have, who the owners are continually changes. Those who own the tools of production are not only kept from cartelling by law but have pretty much accepted a dynamic and competitive role for themselves. Therefore, in their competition they are forced to plow back a substantial amount of profit into increased tools of production. In their competition for the consumer's dollar they are forced to reduce prices and expand production. And in their competition for manpower and for customers they are forced to study the raising of wages. Result, to the masses of people, a great and early hope of progress is held out. Practically no one is frozen in the social and economic class in which he was born. From rags to riches, and log cabin to the White House becomes a thematic overtone affecting all neighborhoods, communities, clubs, institutions, and customs.

If, then, we must discover any ruling circles in the United States, we must look ultimately to the ultimate consumers. And, if in the process of bringing order and leadership to an economic structure someone is to authoritatively settle arguments and become a dictator, who can more ethically do so than the consumer rather than the owner or the worker since it is the consumer for whom all goods and services are produced. We then have dictatorship by function rather than by status whether of the left or the right. This is what *Fortune* sometime ago called the "Permanent Revolution." Let's not be kidded into taking a defensive position.

F. F. BRADSHAW

What does current research indicate as to executive behavior? Are an executive's difficulties due more to his leadership or to the formal organization? Is there any Golden Mean between directive and permissive types of executive leadership? The author considers these and many other questions in a remarkably penetrating analysis of the executive at work.

Research Trends In Executive Behavior

By Chris Argyris
Associate Professor
Industrial Administration
Yale University

IF an executive initiates action, dominates policy, dictates the work technique and activities, controls the future, rewards and penalizes, controls and evaluates his subordinates, he may be said to be a "directive" or "autocratic" leader. This type of leadership behavior has been studied experimentally by numerous researchers during the past ten years.[1] Briefly, the results are these:

The directive leader creates a situation in which the subordinates will tend to feel *dependent* upon the leader for the effective running of their group. They will also feel inferior and passive to the leader. The dependency relationship makes it natural for subordinates to become leader-centered. They will be continually trying to figure out what mood the leader is in and what he wants. They will also communicate to him primarily that information which they believe will keep their relationship a happy one. Thus there will be two-way communication but the information up the line may not accurately describe what is also going on down the line.

Competition by subordinates for the leader's favor can also be expected. This competition in turn may lead to lack of cooperation and hostility among subordinates. (Throwing the dead cat in the other fellow's back yard or buck passing.) The problems of cooperation and resulting hostilities will probably be kept hidden, not necessarily because subordinates fear telling the leader, but because they much prefer to make him believe that they are a "team" with him as the quarterback. Subordinates will tend to be department-centered rather than organization-centered. Their effectiveness as a group will depend upon the executives' skill rather than on their own abilities to work together. The subordinates will admire the leader for his technical competence but be somewhat perturbed by his "needle" and "pressure." Also the subordinates will be continually "fishing" to discover what organizational problems the leader is worried about. They can be expected to continually "feel the boss out" to discover how high they rate with him. Moreover, under directive leadership the subordinates tend to have low morale, dislike the leader and have relatively low production.

However, a study of an actual plant manager in a "real" situation does not confirm all of these results. Argyris reports that the morale of the subordinates is high;[2] they respect the executive and many aspire to be like him; they want the executive to remain because they, and the employees, believe that as long as their hard-working, pressuring dynamo remains, they are confident of a steady job. This plant has low waste, error and costs as well as the best profit record in years. However, the subordinates *also* definitely report tension, conflict, back-biting, apple-polishing, knifing in the back. They

[1] For operational definition of "autocratic" leadership see:

a. *R. Lippitt and R. White, "The 'Social Climate' of Children's Groups" in R. G. Barber, J. Kounin, and H. Wright (eds.)* Child Behavior and Development, *New York, McGraw Hill,* 1943, *pps.* 485-508.

b. *R. White and R. Lippitt, "Leader Behavior and Member Reaction in Three 'Social Climates'" in D. Cartwright and A. Zander (eds.)* Group Dynamics, *Row, Peterson and Company,* 1953.

[2] *Chris Argyris,* Executive Leadership, *Harper and Bros.,* 1952.

CHRIS ARGYRIS

After consulting in human relations and executive development for the Department of Health, Education and Welfare (1952-54) and for the governments of England, Norway, Sweden, Holland, France, Italy, Greece and Germany (1954-55), Chris Argyris became Research Project Director, Labor and Management Center, and Associate Professor of Industrial Administration at Yale University. He received his Ph.D. from Cornell in 1951 and is the author of many publications, major among them being **Executive Leadership, Personnel Fundamentals for Administration,** and **The Impact of Budgets on People.**

rationalize their frustrations ("Hell, it's part of the game") and *project* their tensions (buck-passing and damning the budget men or the engineers or anybody who's handy). Some even *sublimate* their feelings by working themselves to a state of "nervous collapse."

Here we find a conflict. On the one hand, the company is making its profits, while on the other hand, it is not creating a human climate so that the subordinates can develop to be future executives. Directive leadership may pay off in dollar profits but it does not develop executives for tomorrow from the followers of today. The "human costs" for the high profits are high.

PARTICIPATIVE RESULTS

Many people state that a "democratic"* or "permissive" executive may achieve high production and cut down the "human costs." In order to find out, we conducted a study of executive behavior in actual plants that seemed to us to be more "permissive" than that of the executive mentioned above.

Briefly, we found that the degree of tension, conflict, frustration and interdepartmental hostility was definitely lower. However, it still existed; especially below the surface. The subordinates felt less dependent, submissive and passive to the executive. Nevertheless, these feelings still existed. The employees definitely did not behave freely in front of their executive. They did like "being left alone" and "being their own boss." Productivity, although acceptable by management, is *not* as high as the *employees* report it can be.[3]

Why is this so? Why doesn't participative leadership work? We turn our attention toward the nature of organization and the employees. Maybe they can supply some answers. Speaking of the employees, we find that it is valid to say that psychologically healthy people *in our country* tend to develop:

1. from being passive as an infant to being more active as an adult.
2. from being dependent upon parents to being relatively independent of them.
3. from being in a subordinate position in the family to achieving an equal to or higher position than his friends achieve.
4. from expressing few abilities to expressing many abilities.[4]

In other words, parents try to inculcate in their children desires or needs to become more active, independent, and so forth. If we assume they succeed, then the youngsters that come to work will tend to need work situations in which they can express these "natural growth trends." (i.e., independent, active, many abilities, equal or higher position.)

Can the organization, (as conceived by its management) independent of the leadership, fulfill these needs? In order to answer this question, we studied many examples of formal organizational structures and waded through hundreds of books and articles on how to administer and organize people. We concluded that if the formal organization is defined by the use of such "organization" principles as task specialization, unity of direction, chain of command and span of control *and if* these principles are used *correctly*, then the employees will work in situations in which they will be dependent, subordinate and passive to the leader for their rewards, penalties, directions, and communications and will use few of their abilities. We also found that the degree of passivity, dependence, etc., will increase for those employees as we go *down* the line *and* as the work takes on more mass production characteristics.[5]

ORGANIZATION CONTROLS

In short, the formal organization places the employee in a situation that requires him to behave more and more like an infant; but, of course, while doing this, he is well paid and given seniority and other benefits.

We can predict that to the extent the employees are relatively mature adults, they will feel frustrated. Frustration will arise as they are unable to obtain need-satisfaction while at work. Frustration leads to an *increase* of aggression and a *decrease* in individual efficiency.[6]

But this isn't all formal organization does to the employee. It is common in most industries for the organization to hire staff experts who tell the employees (a) how much to produce (production and incentive engineers), (b) the best methods of production (work study engineers), and (c) the quality they must achieve (quality control and budget experts). In short, the organization places the employee in a work situation in which he has little or nothing to say about his goals, the way to achieve his goals, etc. Researchers tell us this will tend to create feelings of psychological failure, on the part of the employees.

People who feel failure tend to lose interest in their work, lower their standards of achievement, lose confidence in themselves, give up quickly, fear new tasks and new methods.[7]

PAID FOR DISSATISFACTION

As a result of the very nature of formal organization, the employees are faced with work situations that create feelings of failure, frustration, conflict, and tension. How do the employees react? Briefly, the employees may:[8]

1. Leave (But where can they go? Most organizations are founded on the basis of these principles.)
2. Climb up the ladder. (A few do. As you know, it means hard work, loss of friends and isolation.)
3. Create informal work standards to goldbrick, restrict production, make errors, produce waste and, perhaps most important, become apathetic, disinterested, passive and dependent. (For example, one attitude I hear is "take it easy—don't burn yourself out. The company will be here tomorrow. Relax." or "What the hell are you trying to do—become president? Relax; let the boys upstairs figure that out. They ought to do something while sitting on their asses in those plush offices.")
4. Decrease their feelings of dependence, subordination to management by taking away some of management's power and giving it to themselves. (Trade unions)

* *A democratic executive is actually a contradiction in terms.*

[3] *Chris Argyris, "Studies in Organization Behavior" I and II, Labor and Management Center, Yale,* 1954 *and* 1955.

[4] *Chris Argyris,* Personality Fundamentals for Administrators, *Yale, Labor and Management Center (Rev. Ed.)* 1954.

[5] *Chris Argyris, "Executive Leadership — Developing it in Yourself and in Others" Speech given to Harvard Business School Club of New York. To be published by the McKinsey Foundation, pp.* 24-30.

[6] *R. Barber, T. Dembo, and K. Lewin,* Frustration and Regression, *Univ. Ia. Stud. Child Welfare,* 1941, *Ch.* 1, *p.* 18, *and John Dollard, et al.* Frustration and Aggression, *New Haven, Yale University Press,* 1939.

[7] *R. Lippitt and L. Bradford, "Employee Success in Work Groups,"* Personnel Administration, *Vol.* 8, *Ch.* 4, *Dec.* 1945, *pp.* 6-10.

[8] *For an attempt at integrating this and other social science research, please see Chris Argyris,* Behavioral Science and Organization *(to be published,* 1956.)

5. Become *less* interested in non-material incentives and in human relationships while at the same time become *more* interested in money and material rewards. (It is as if the employee says, "O.K., if you want me to work under these conditions—pay me!" And so management pays more wages, better benefits, etc. Odd as it may seem, if the analysis is valid, I've concluded that we are entering an era when a worker feels satisfied when he is paid more money for his *dissatisfaction*. This gives us a hunch as to why employers may prefer autocratic leadership and the dependence and submissiveness that it creates.)

It becomes clear, I believe, that some of the human problems that we have been attributing to directive executive behavior are actually partially caused by the nature of organization and the employees who have decided to accept dependence, passiveness and apathy.

HIGH FRUSTRATION TOLERANCE

Does this mean that we can forget about participative leadership? On the contrary, it now becomes especially crucial that management develop effective executives. They cannot afford to permit authoritarian, directive leadership because the slightest bit of directive leadership compounds the crime the organization is committing every minute, every hour of the day.

I suggest that executives have no choice but to develop themselves in human relations. Increased opportunity for participation, and increased opportunity for employee creativeness is necessary if we are to overcome the negative effects going on all the time in and because of formal organization.

The executive's lot is not an easy one. If he is directive, he may develop high profit figures but not his subordinates. He may grow ulcers as a result of the necessity for his constant needling. If he is democratic, he may meet resistance from his apathetic workers who prefer to let *him* do all the thinking and take all the responsibility. He may also cut down the "human costs" and decrease production. What is he supposed to do? Some may decide to be directive; some democratic, some a little of both. Some may say to hell with it and focus on their countless problems of marketing, finance, sales, and production.

Is it any wonder that "successful"[9] executives (i.e., those who can make profits and take it) have been found to manifest characteristics like the following: They show a *high frustration tolerance.* They are able to work hard on projects that may not realize any present-day immediate desires in order to achieve their longer range desires. They encourage *full* participation by *not* beginning a meeting with a suggested solution. They continually emphasize that the subordinates feel free to say what *they* think the problems are and try to help them achieve a solution. They *understand* the "*rules and acts of competitive warfare.*" Although they do not agree that it is fair to call it a "dog-eat-dog" world, they agree that they have been "nibbled at" at times. Nor do they become enraged, upset and even paranoid if limits have been placed upon them or if they have received an "unfavorable decision. It's part of the game."

Expressing hostility tactfully is another important characteristic. They can "dish it out" without becoming openly upset. Some are masters at "knifing the other fellow in the back" without his being aware of it. *Accepting victory with controlled emotions and never permitting defeat to shatter them* are also important characteristics for these executives. Moreover, they express a strong desire to be *directive* (initiating action for others); to be continually *solving problems;* to be their *own boss;* to *continually seek success* in the company and in the community; to *work extremely hard* and to be an *expert* in their field. They also try to do everything possible to maintain friendly relations. They are *sensitive to others' feelings* not necessarily to understand them but in order to *minimize* conflict and hostility in their interpersonal relationships. They try like hell to keep their personalities out of their jobs.

INDIVIDUAL GROWTH LIMITED

In short, if our results are valid, we may be developing executives who are primarily directive, hardworking, job-oriented, tolerant of frustration and not desirous of focusing on the feelings of others (or their own). Although such executives will probably *get the job done*, there is sound evidence to show that they will *not* tend to develop subordinates into mature leaders. For example, research suggests that the executive who develops individuals most effectively is one who, among other things, instead of initiating action for others, draws out and by careful questioning helps the other clarify his thoughts and arrive at his own decisions; who, instead of inhibiting the expression of his feelings and tensions, expresses them as fully as he feels is necessary; who, instead of fighting against frustration to achieve his goal, stops fighting to try to understand what is frustrating him and why; who, instead of being harmonious makes no attempt to cover up, gloss over, minimize or refuse to recognize conflict and tension.[10]

EXECUTIVE DILEMMA

Hence we are faced with a basic dilemma. On the one hand, organizations with apathetic, disinterested workers who restrict production, may well need directive, self-motivated, expert executives to get the job done and keep the company going; but at the same time, these are *not* the most effective executives for developing people. Since, in the final analysis, people *are* the heart of the organization, how can management have its cake and eat it too?

Can this dilemma be solved—and if so, how?

Unfortunately, because of the lack of knowledge on the part of both researchers and executives, there is not much to offer in the way of useful solutions. *Much more research is urgently needed.*

1. One possibility may be a combination of directive and permissive leadership. Exactly what *is* this combination of "the world's finest leadership behaviors?" I am not certain. I have an idea that it isn't a 50-50 combination. Subordinates tend to prefer a hard-boiled autocrat to the insecurity an ambivalent, unsure leader creates. It may be that we will have to forget about an executive's having one particular leadership style and help him to develop the best kind of executive behavior that fits each administrative situation. This is not conceived as autocratic *or* participative *or* con-

[9] *The material is abstracted from the author's article, "Some Characteristics of Successful Executives,"* Personnel Journal, *Vol. 32, No. 2, June 1953, pp. 50-55.* Please note that I am not suggesting that this is the author's criterion for "success."

[10] *Chris Agyris "Top Management Dilemma: Company Needs vs. Individual Development,"* Personnel, *Vol. 32, Ch. 2, pp. 123-134, Sept. 1955.*

sulative leadership. It is *reality leadership;* a leadership that focuses on the realities in any given situation. We may be able to tell the employees *ahead* of *time* that under these conditions the executive will tend to behave in such and such manner, while under those conditions his behavior will be such and such. Although the executive varies his behavior, the element of uncertainty is not present because the subordinates will be able to predict how the executive will behave in concrete situations.

2. It is important to recall that although the apathy and disinterest that we observe seems to be "in" our employees, they are not necessarily the cause. The organization is a "culprit" and so is directive leadership. Thus, if an executive views "human relations" as changing the attitude of individual employees, then in the name of respect for human feelings he should *not at first* be human relations conscious. First, he ought to take a good look at the organizational structure and see that *it* is not the cause of many of the human problems. Second, take a look at the executive behavior for the same reason. There is, it seems to me at least, altogether too much of changing *people* without first changing their work situation.

NEW PRINCIPLES NEEDED

3. We need much more thinking and research on the impact of the organizational structure, the effect of the very way we organize our efforts upon the individual. New organizational principles are urgently needed that can create a structure whose inherent impact is not similar to the present one. What should this structure look like? I confess, I do *not* have a ready answer. I am *not* advocating that we discard the principles now in use. Although they may lead to human difficulties, no one has constructed another set of principles that result in organization capable of achieving objectives *and* maintaining the organization in today's world.

4. Perhaps the most important recommendation, and the one that is most strongly backed up by research, is that executives need to become more aware of themselves (their prejudices, goals and feelings) *and* the impact of their behavior. This will automatically lead them to being more aware of others because we know that in order to understand others we must first understand ourselves. Please note, I am *not* suggesting that the executive must *change* his behavior. It seems to me that a more useful objective is to help the executive become more aware and *more tolerant* of his own makeup. I believe if more people could be helped to understand and respect themselves, greater respect of others would probably automatically follow.

5. Self-awareness is not enough. An executive needs to develop basic human relations skill. Here, perhaps, the basic skill is to be able to sense correctly, in every administrative situation, how far the interests of organizational effectiveness will permit individual satisfaction. But *how* does an executive judge a situation in order to act appropriately? The answer seems to lie in becoming more skilful in the art of listening; asking questions to help others understand their own feelings as well as to understand the facts of the situation more clearly; and accurate observations of behavior.[12]

In this connection, the author recently read a stimulating manuscript written by an imaginative production manager, in a plant employing about 400 workers. This manager is conducting his own on-the-spot action research. He is trying to discover exactly what a leader must do to help subordinates (in this case foremen) develop and at the same time get the job done. Along with the leadership function, "helping to provide tasks and tools," he also lists: "helping the people develop goals, expectations and procedures;" "attending to (social) atmosphere;" and "helping members discover their own needs and limitations."[13]

Executives and researchers must work more closely together if further progress is to be made in solving the problem of company needs vs. individual development. Individually, neither is equipped to solve it alone.

Thus we find that as we try to understand executive behavior, we need to understand the organizational environment within which it operates. As we do this, we are slowly but surely drawn to the executive himself. The art of leading others begins with ourselves. ■

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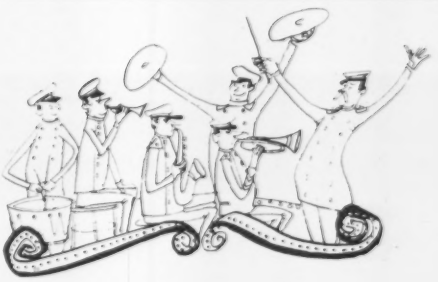
[11] *Chris Argyris, Personality Fundamentals for Administrators, Yale Labor and Management Center (Rev. Ed.)* 1954.

[12] *F. J. Roethlisberger, "Training Supervisors in Human Relations,"* Harvard Business Review, *Sept.-Oct.,* 1951, *pp.* 47-57.

[13] *James Richard,* Fostering Successful Membership in an Organization, *to be published by the Industrial Relations Center, University of Chicago, Chicago, Ill.*



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Is length of service given great or little weight in considering technical and scientific candidates for promotion? What value is given to merit ratings of the candidates? To aptitude tests? To the opinions of the present superior? This report of a questionnaire survey of sixty-nine large and small companies contains answers to these and many other questions.

Promotional Practices For Technical Men

By Eugene J. Benge
Management Engineer
Asheville, North Carolina

A PROPOSAL to promote technical and scientific keymen on a seniority basis had sent management into a dither. "Other big companies do it," was the claim. So it was determined to get the facts through an unbiased survey of other companies. It was agreed that the aim of the survey was to elicit answers to the following questions:

- Has industry been successful in promoting well qualified technical and scientific keymen regardless of age or short service?
- Does industry use the same methods and criteria for promoting professional and administrative personnel that are used in the promotion of technical and scientific keymen?
- What devices such as interviews, records, aptitude tests, or appraisals have been found helpful in determining which technical and scientific individuals should be promoted?
- Is information about likely candidates for promotion maintained in some sort of talent file?

A questionnaire was developed explaining the purpose of the study, requesting pertinent information, and promising a summary of the findings to cooperating companies. The questions about promotional practices were:

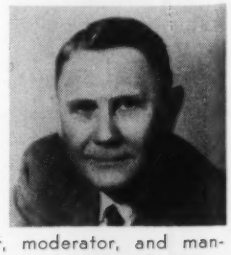
"In promoting to fill various technical and scientific keymen positions (assistant foreman to chief engineer level):

1. Number in order of importance the devices used:
   a. Recommendation of present superior
   b. Study of candidate's personnel file
   c. Aptitude tests (at time of employment)
   d. Aptitude tests (at time of consideration for promotion)
   e. Merit rating
   f. Interview by proposed new superior
   g. Seniority (length of service)
   h. Other.
2. Do you maintain a 'talent file' of individuals who seem to be promotable?
3. Please rate your success in promoting well qualified *technical and scientific* keymen who were young or had little service (i.e., you passed up persons older in years or service).
4. Do you use the same system and criteria for promoting professional and administrative personnel that you use in the promotion of technical and scientific keymen?"

The questionnaire was sent to several hundred companies over the United States, large and small, in many fields of endeavor. Sixty-nine companies, representing a total of nearly 300 thousand employees, responded. Figure 1 shows the industry classifications of these companies. Figure 2 classifies the companies according to the size of the working force. It will be noted that 37 of the 69 reporting companies employed 1,000 persons or more.

Tabulation of the answers to these questions was a tedious task and the detailed data will not be presented here. However, the resultant total findings are believed to be highly significant.

	Average Rank
1. Average importance rank of devices used in promotions:	
a. Recommendation of present superior	1.7
f. Interview by proposed new superior	2.7
b. Study of candidate's personnel file	2.9



EUGENE J. BENGE

Author, lecturer, moderator, and management consultant, Eugene J. Benge also has had many years' experience in industry. From 1920 to 1926 he was Industrial Relations Manager for Atlantic Refining Company in Philadelphia, from 1930 to 1935 he held the same title at the American Oil Company in Baltimore, and then served as Training Director for Firestone Tire and Rubber Company. Since 1939 he has been president of his own concern, Benge Associates, specializing in human relations techniques.

	Average Rank
e. Merit rating	3.4
d. Aptitude tests (when considered for promotion)	4.3
c. Aptitude tests (at time of employment)	4.6
g. Seniority (length of service)	4.7
h. Other	5.5

	Number
2. Maintain a talent file?	
No	47
Yes	20
No answer	2
3. Success in promoting well qualified technical and scientific keymen who were young or had little service?	
Good	51
Fair	10
Poor	1
Can't answer—use seniority	4
No answer	3
4. Use same system for promoting professional and administrative as used for technical and scientific personnel	65
No answer	4

SMALL VS. LARGE COMPANIES

Before drawing conclusions, two subsidiary studies were made. The first was to discover whether promotion practices in small companies differ from those in large companies. For this contrast, the eight smallest companies (average employment, 185) and the eight largest companies (average employment, 24,960) were selected. Figure 3 shows the average ranks; these in turn have been reranked, 1 to 7, to facilitate comparisons. These results suggest that small companies rely on the personnel file more than large companies, large companies rely on merit rating more than small companies, both rely on the recommendation of the present superior and interview by the proposed superior, and both place little stress on tests or length of service.

The second subsidiary study dealt with the railroad and utility groups, which rather typically lay considerable stress on seniority in the wage earner group. Did their policies on technical and scientific keymen reflect this situation, or conform to the practices of industry in general? There may be a tendency for railroad and utility managements to give more credit to "length of service," but even so, the factors of first consideration are the same in these industries as for the entire group.

Figure 1

Industry Classification of Companies Reporting

Industry	No. of Companies	Total Employment	Industry	No. of Companies	Total Employment
Aircraft	1	9,997	Paper	6	11,014
Chemical	3	1,625	Print. & Pub.	4	2,050
Communication	2	5,677	R.R. and Utility	5	135,286
Electrical	6	35,100	Textile	1	4,500
Finance	5	8,160	Misc.	12	18,328
Food	5	20,850	Chemical	1	not given
Metal working	18	39,988	Total	69	292,575

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Certain conclusions stood out clearly in the results of this survey:

In promoting technical and scientific keymen, American industry gives first consideration to:

a. Recommendation of the present superior
b. An interview by the proposed superior
c. The candidate's personnel file
d. Merit rating.

Considered of less importance are

a. Aptitude tests, either at time of employment, or at time of promotion
b. Length of service.

Large companies tend to accent merit rating more than small companies.

Small companies rely on the personnel file more than large companies.

Industrial companies rank length of service last as a promotion criterion; railroads and utilities rank it low, but consider that aptitude tests have even less value in helping them decide promotions for technical and scientific keymen.

Seven out of ten companies do not maintain a talent file; those which do are mainly large companies.

Eight out of ten companies consider they have had good success in promoting well qualified technical and scientific keymen who were young or had little service, passing up less qualified employees who were either older or had longer service.

Virtually all companies use the same procedures for professional and administrative employees as for technical and scientific employees.

This was a factual study, not designed to prove any previously established position. In passing, however, it may be in order to comment that industry's failure to develop talent files suggests a management device which has largely been overlooked.

Also those few managements who have really learned how to use aptitude tests in promoting employees might want to quarrel with the scant recognition accorded such tests by managements in general.

It seems conclusive that, for technical and scientific men, industry places little value on mere length of service as a factor in promotion.

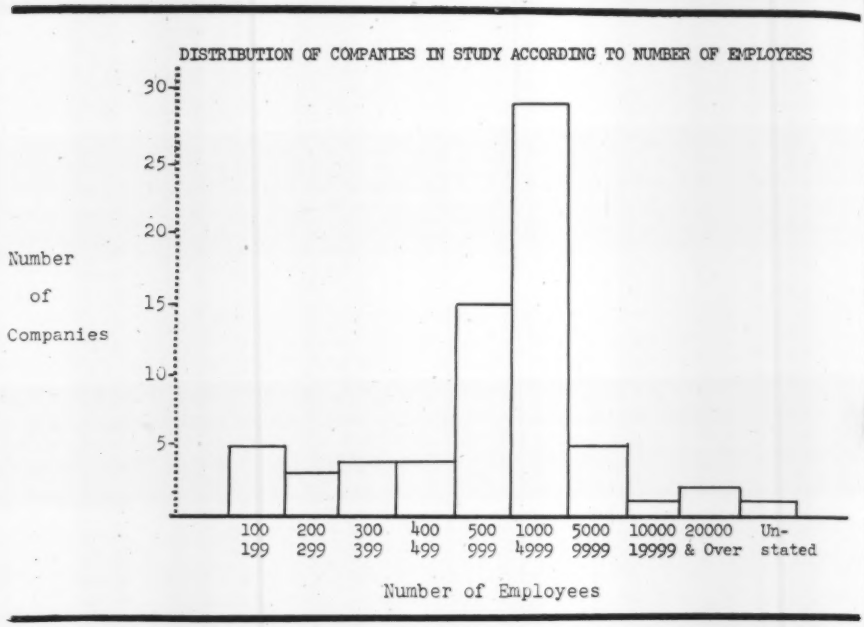

Figure 2

Comparison of Average Ranks — Small and Large Companies

Factors Considered	Ranking By Companies: 8 Big Companies Average Rank	8 Big Companies Re-Rank	8 Small Companies Average Rank	8 Small Companies Re-Rank	69 Companies Average Rank	69 Companies Re-Rank
Recommendation of Superior	1.3	1	1.9	2	1.7	1
Personnel File	3.1	4	1.5	1	2.9	3
Tests at Time of Employment	5.0	6.5	4.7	7	4.6	6
Tests at Time of Candidacy for Promotion	4.0	5	4.3	6	4.3	5
Merit Rating	2.3	2	3.4	4	3.4	4
Interview by New Superior	2.7	3	2.3	3	2.7	2
Length of Service	5.0	6.5	4.0	5	4.7	7

Figure 3

CHAPTER MEMBERSHIP STANDINGS AS OF FEBRUARY 1, 1956

New York	395	Binghamton	98	Clearing	54
Philadelphia	367	Hudson Valley	98	Hartford	54
Northern New Jersey	363	Baltimore	97	Calumet	53
Cincinnati	301	Greensboro	97	Greenville	51
Chicago	285	Kansas City	93	Charlotte	47
Cleveland	268	Dayton	85	Western Mass.	44
Lancaster	262	Wilmington	77	Central New York	43
Pittsburgh	235	Bridgeport	77	Lehigh Valley	43
Detroit	201	Georgia	72	Twin City	43
Boston	192	Puerto Rico	72	Fox Valley	40
Washington	191	Sacramento	72	St. Louis	40
San Francisco	165	Providence	71	New Orleans	36
Milwaukee	156	Richmond	70	Madison	35
Dallas	144	North Alabama	67	Athens	34
Los Angeles	131	Knoxville	65	Nashville	32
Indianapolis	126	Columbus	65	Northeastern Penna.	28
Worcester	122	Trenton-Del. Valley	65	Portland	27
Western No. Carolina	113	Alabama	62	Louisville	18
Montreal	105	Reading	59	Stamford	16
New Haven	105	Long Island	56	Non-Chapter	104
Raritan Valley	105	Central Penna.	55	Non-Resident	84

Is a corporate merger likely to affect your career suddenly? What are the basic causes and effects of the current wave of mergers, which has created such excitement among executives, bankers, and government leaders? Why do companies "sell out"? Why are companies "raided" and managements ousted? Are mergers a cure-all for corporate ills? What does this trend mean to management executives now? What could it mean to our economy and social structure?

Why So Many Corporate Mergers?

By Emanuel Rapoport
Associate, J. Barth & Company
San Francisco, California

THE subject of corporate mergers has of late received increasing public notice, partly because of the sharply higher frequency with which such business moves are occurring, and partly because this trend has once more engaged the attention of congressional probers.[1]

Any discussion of this important and widely misunderstood topic ought to be preceded by its definition. For my purpose it will suffice to describe mergers as corporate marriages. It need not be assumed that they are exclusively marriages of convenience although the element of economic opportunism is naturally present. Even in the field of business the matter of personal compatibility as between the negotiating principals is frequently decisive. More than one logical merger proposal has foundered on the rocks of personal antagonism or of irreconcilable views on future policies.

The forces behind amalgamation are not too difficult to recognize. Broadly speaking, they reflect a desire for greater economic strength. Unfortunately this explanation will not fit all situations at all times. A brief review of economic history starting with the turn of the century makes this apparent.

Fifty-odd years ago this country experienced a great merger wave from which huge business aggregates like U.S. Steel and Standard Oil emerged. That period can well be called the era of giantism, when the prime motive seemed to be concentration of economic —and collaterally, political—power into a relatively few hands within the principal industrial classifications. This movement toward monopoly contrasted sharply with the traditional concept of a free, competitive economy and the popular reaction was both swift in coming and thorough in execution. The spectacular attempts at domination of vital markets led to the enactment of antitrust legislation which, among other things, compelled the break-up of the Standard Oil empire into a series of relatively independent, regionally limited concerns; these became the Standard Oil companies of New York, New Jersey, Ohio, Kentucky and California.

Some twenty-five years later the country passed through another period of major mergers. That hectic decade which was climaxed by the crash of 1929 could properly be labeled the era of financial hocus-pocus. Here the overriding idea appeared to be control through extreme leverage. Ingenious promoters would purchase effective or absolute control in a company by forming a holding company with a heavy issue of publicly financed senior securities (bonds and preferred stock) while retaining ownership of the common with a nominal investment. As long as business and market quotations continued to rise it was possible to use the swelling holding company equity as a base for the creation of a third corporation with a similarly lop-sided capitalization. In effect such pyramiding permitted one dollar of ownership investment to control hundreds of dollars of corporate values. When the underlying values shrank, equities vanished, wiping out billions of public savings entrusted to intermediate and top holding companies, and creating economic havoc without parallel. The Securities Act of 1933 and the Holding Company legislation

EMANUEL RAPOPORT

After receiving his B.S. in Business and Engineering Administration from M. I. T., Emanuel Rapoport worked in merchandising and administration in Sears, Roebuck and Company. He then became in turn an executive officer of the Superior Meter Company, of Ray-O-Vac International Corp., and of the California Surveys Corporation. As an Associate of J. Barth & Company in San Francisco, he is now mainly concerned with company appraisals, private placement financing, and corporate sales, mergers, and acquisitions.

[1] *This article is based on an address to the S.A.M. San Francisco Bay Chapter.*

were but two steps designed to correct abuses which had seriously shaken the public's confidence in the free enterprise system itself. Names like Insull and Van Sweringen will remain forever and uncomfortably linked to the history of those times.

Soon after World War II there began a third series of mergers. An analysis of the forces currently at work will show that this era can properly be termed one of economic and technological pressure. It is true, of course, that not all corporate unions in prior decades were characterized by socially doubtful motives. However, objective case studies will confirm that the latest merger trend is primarily and soundly based on the urgent need to

1) adjust to a new age of high corporate and personal taxation;
2) strengthen research and development; and
3) meet the twin challenges of permanently higher costs of labor and distribution.

REASONS FOR MERGERS

The first problem concerns especially the closely held corporation which is open to excessive appraisal by federal and state agencies assessing taxes against the estate of a principal owner. Moreover, the task of meeting inheritance tax payments may seriously weaken the business in question. A sale for cash or through exchange for readily marketable securities in anticipation of death is thus clearly indicated. Examples of this type have occurred with particular frequency in food processing and distribution, manufacture of machinery and chemicals, metals fabrication, as well as the textile and apparel fields.

The second requirement arises from the tremendous acceleration of scientific inquiry and discovery which the war years have brought about. Obsolescence of productive processes and company product has speeded up to the point where a well managed business must look upon major expenditures on research and development as sheer survival insurance. Recruitment of the requisite staff and facilities is not a matter of financial strength alone. A prompt solution can often be achieved only via the merger route. A case in point is Remington Rand, a company wishing to expand rapidly within the field of electronic data processing. The Sperry Corporation had the technical skills of the proper kind and in the quantities desired.

NEW OPPORTUNITIES

The third factor calls for better employment of trained manpower through job stabilization and use of the most complex labor saving devices (automation). Greatly increased costs of doing business also suggest product diversification, particularly when it permits utilization of already existing channels of distribution. A typical example is Carrier Corporation, a leading factor in the highly seasonal air conditioning field. The company recently acquired a manufacturer of heating equpiment with a complementary seasonal cycle and with identical or related markets to call on.

Restrictive legislation brought on by each merger wave was meant to bring it to a halt or at least to eliminate excesses which followed in its wake. It is therefore pertinent to inquire whether we are likely to encounter once again government action on a major scale. I will set out a little later and in some detail why this is neither necessary nor probable. At this time, however, I will touch only on the problem of the corporate "raider".

The "raider's" activities must seem to many interested bystanders to be most disruptive and undesirable. Acquisition or merger by economic "coup d'etat" may appear thoroughly reprehensible. Closer scrutiny of actual instances where changes in control and management were forced on reluctant incumbents does not support such a view. While "raiders" are not primarily idealistic reformers of corporate practices they invariably strive to fill an economic vacuum which poor management has created. It is axiomatic that control of well managed companies cannot be challenged successfully and that "raiders" are astute enough not to attempt the impossible. It is also generally true that these newcomers aim to revitalize management and that employee morale and stockholders' fortunes tend to improve as a consequence. This even applies to attempts at control which failed, as in the case of Wolfson vs. Avery, with cash laden Montgomery-Ward as the prize. Here the bitter proxy battle brought about Mr. Avery's ouster and other basic internal changes which benefited both company and stockholders without bringing Mr. Wolfson to the top. There are a few examples of new interests who have resorted to liquidation rather than reconstruction; where this happened it can be shown that the company in question has long been marginal in its industry and that for all practical purposes economic rigor mortis had already set in.

Merger in and of itself is not a cure-all for corporate ills, if the reconstituted management team remains of substandard caliber. The broader, stronger base which merger creates needs to be exploited by skilled executive leadership. Occasionally a merger is triggered by one side's desire to acquire another company's exceptional management which can be had only through a "package deal."

We must therefore conclude that mergers can help good management do a still better job. Unhappily the process of amalgamation creates internal problems which may bring about executive displacement and similar temporary shocks. Older key men may be forced out, younger men may see their progress blocked. In view of the continuing shortage of qualified managerial talent the latter will encounter few difficulties in making new connections. The undeniable reluctance of many companies to employ the older and often highly experienced executive is however, much more regrettable. The economic and social losses which are implicit in this prejudiced and short-sighted attitude could well command the attention of such professional bodies as the Society for the Advancement of Management. Policy makers are discovering daily that the older hourly employee performs as well as, and frequently better than, his younger and generally less mature colleagues; it should be relatively easy to demonstrate a similar relevancy with respect to the older executive who has been displaced through no fault of his own.

CONTINUING COMPETITION

From the foregoing it is obvious that mergers will take place as long as the conditions favoring them remain with us. Fears have been expressed that ultimately this would lead to market domination by fewer and bigger concerns, in short, to monopoly. While this thinking reflects the tenets of an earlier economic liberalism, exemplified by the writings of the late Supreme Court Justice Brandeis, today's progressive thinkers are reaching decidedly different conclusions. Typical is David

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Lilienthal who, as head of the Tennessee Valley Authority and later of the Atomic Energy Commission, had come in close contact with leaders of big business. He has recently pointed out that classic competition, based on price alone, has in many major fields been conspicuous by its absence. The struggle was generally waged on the basis of other factors, such as superior quality and better service. Today this is quite evident in such industries as steel, nonferrous metals, and automobiles.

The drive for a bigger share of the market calls for ever increasing research which serves both as a competitive safeguard and as a constant threat to the other fellow's position. Most important is the greatly increased evidence of inter-industry competition which acts as a strong check on potential big business monopoly. Aluminum is after some of the markets copper and steel have long supplied. New types of plastics encroach on a whole series of metals and other materials. Synthetic fabrics are giving natural fibres a difficult time. A fast-growing trucking industry spelled an end to the dominant position of the railroads. The public in turn has ample discretionary purchasing power to favor the producers of the biggest bargains within the vast consumer goods field.

Finally, disappearance of concerns through mergers is offset by the rate at which new businesses are being formed in young industries like electronics.

Under these circumstances the alarm which some observers have expressed must be considered as largely unfounded. Adequate restraints are already on the statute books to prevent mergers clearly tending to restrict competition. In fact some lawmakers have seriously proposed steps to facilitate mergers between smaller firms as a means of increasing competition. Some regulations will probably be needed to cope with such questionable practices as inadequate disclosures during proxy fights, and attempts to acquire control by the use of mutual, pension, or profit sharing funds.

This discussion will necessarily have to omit reference to the techniques of appraisal which are an integral part of all merger negotiations. They involve many questions—size and consistency of profits, book values, return on invested capital, and trade position, to list a few. No wonder that ultimate agreement is invariably preceded by a generous amount of old fashioned horse trading.

In conclusion it must be stated that the latest merger wave simply constitutes recognition of the increasing complexity of modern business. One of the salutary by-products of this movement is the greater emphasis which the merged concerns are likely to place on skilled management in depth. This is clearly in line with the general eclipse of the all-powerful owner-manager who is being superseded by a balanced team of professionals. The classic example is the automobile company which had long been run in an almost feudal manner by the founder, who stubbornly refused to adjust to the changing pattern of the market. When his young grandson succeeded to control of the enterprise it was losing $9 million per month. This youthful heir had the good sense to bring in seasoned men who had the specialized training and experience to reverse the company's fortunes promptly and dramatically. Explaining the radically different business philosophy of the third generation of ownership, the grandson recently said:

"The modern joint venture capitalism has largely replaced tycoon capitalism. The one-man-band owner-manager is fast being replaced by a new service class of professional managers, dedicated more to the advancement of the company than to the enrichment of a few owners."

The speaker was Henry Ford II. ■

11th MANAGEMENT S.A.M.—A.S.M.E.

The Theme and of the

BRUNO A. MOSKI
S.A.M. GENERAL CHAIRMAN

Since graduating from Yale in 1927 with a degree in Industrial Engineering, Mr. Moski has had extensive experience in industrial engineering and plant management with Western Electric, Sperry Gyroscope, Sargent, Colt Fire Arms and American Paper Goods. With Yale & Towne since 1950, he is now Director of Industrial Engineering of the Yale Material Handling Division of Yale & Towne Manufacturing Company and Vice President of S.A.M.'s Middle Atlantic Region.

FRANK F. BRADSHAW
S.A.M. PRESIDENT

President of the Society for Advancement of Management and Member of the Board of Directors of the Council for International Progress in Management, Dr. Frank F. Bradshaw organized and has been President since 1945 of Richardson, Bellows, Henry & Company, a management consulting firm in New York City.

HARRY M. KAISER
S.A.M. MEMBER

Now Staff Department Manager of the Tire Division of U. S. Rubber Company, Mr. Kaiser started in the industrial engineering department of an Indiana Plant of U. S. Rubber in 1930. A former member of the Taylor Society, he has played an active role in the affairs of its successor, the Society for Advancement of Management, first as a member of the Detroit Chapter and now with the New York Chapter.

V. DONALD SCHOELLER
S.A.M. MEMBER

Recently made Associate Director of Manufacturing Management, Management Development Program, Case Institute, Mr. Schoeller had been director of the Taylor Management Laboratory at the Wharton School for eight years. He has conducted lectures and conferences on management improvement for industry and government in many foreign countries. Prior to going with Wharton School his experience was in industrial engineering and management positions.

SPARKLING with able know-how speakers, a most stimulating program has been planned for our 11th Annual Management Engineering Conference, formerly known as the Time Study and Methods Conference, sponsored jointly by the Society for Advancement of Management and the Management Division of the American Society of Mechanical Engineers, which will be held at the Hotel Statler, New York City, on April 26-27, 1956.

In meeting the challenge of improving upon the technical quality of our Tenth Anniversary Time Study and Methods Conference, your Conference Committee surveyed the entire United States, to bring to the Conference the latest and best techniques of Management Engineering.

On the basis of that survey, it was considered most fitting to select as the Conference Theme,—"MANAGEMENT KNOW-HOW, U. S. A."

All S.A.M. Chapters and A.S.M.E. Sections were requested to submit nominations of outstanding speakers in the various areas of the country, for consideration by your Conference Committee.

With the list of nominations as a starting point, the Committee developed a well-rounded program, featuring techniques of practical interest to management executives and engineers. For each topic, the acid test of demonstrated accomplishment was applied. The Committee's pictures are carried here with appreciation for the great enthusiasm and effort they have devoted to this Conference.

The 1956 Conference opens with a social Cocktail Party at the Hotel Statler, on Wednesday evening, April 25th. All full registrants to the Conference are invited to attend at no additional cost, to meet old friends, make new friends, and to welcome the many Conference speakers who will be present.

On Thursday morning, April 26th, the Technical Sessions will open in the Grand Ballroom and the Georgian Room. Bruno A. Moski will deliver the Conference Keynote for S.A.M., in the Grand Ballroom, while Matthew J. Murphy will deliver the Conference Keynote for A.S.M.E. in the Georgian Room.

Our Conference program includes sixteen distinguished technical speakers, distributed among eight sessions dealing with:

Operations Research—What are we seeking?
Information Processing—How do we record it?
Automation—How do we make it?

WILLIAM R. SWETT
S.A.M. MEMBER

Mr. Swett began his business career in 1936 with Firestone Tire and Rubber Company. He is now Vice President and Director of Bruce Payne and Associates, and has been consultant to companies in many industries. He is a National Director of the Society for Advancement of Management, and has lectured at the University of Connecticut on management.

OLIVER J. SIZELOVE
S.A.M. MEMBER

Since 1936 Professor Sizelove has been with Newark College of Engineering and is now Chairman of the Department of Management Engineering. He has done consulting and arbitration work with A.A.A. and the New Jersey State Board of Medicine since 1940. Prior to teaching, he worked as an industrial engineer with several companies.

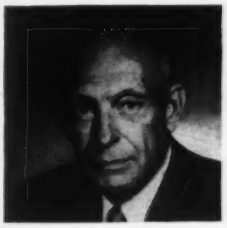
K. O. WILLIAM SANDBERG
S.A.M. MEMBER

Since 1950 Dr. Sandberg has been with the General Electric Company, first as industrial engineer and operations research manager and now as Manager of the Plastics Department of its Chemical and Metallurgical Division in Decatur, Illinois. He received his M.A. and Ph.D. degrees in engineering from New York University and is an S.A.M. National Director.

Annual ENGINEERING Conference

The Committee

Conference



JOSEPH WARREN BARKER

A.S.M.E. PRESIDENT

President of the American Society of Mechanical Engineers and President of Sigma Xi, Dr. Joseph Warren Barker is Chairman of the Board and President of Research Corporation, a nonprofit foundation, and Chairman of the Board of the wholly owned subsidiary, Research-Cottrell, Inc. of New York City.

MATTHEW J. MURPHY

A.S.M.E. GENERAL CHAIRMAN

Mr. Murphy has been Editor of McGraw-Hill's **Factory Management** since 1953, after being the magazine's associate editor for two years. Prior to this time he had combined business and university careers, having been assistant vice president of Abraham & Straus, personnel manager and training and research director of Bendix Radio, and instructor and assistant professor at the School of Commerce, New York University.

Work Measurement—How do we measure it?
Statistical Techniques—How do we check it?
Material Handling—How do we transport it?
Maintenance Control—How do we maintain it?
Cost Reduction—How do we improve it?

We are particularly fortunate in obtaining as our dinner speaker on Thursday evening, Dr. Joseph Warren Barker, Board Chairman of Research-Cottrell, Inc., President of the American Society of Mechanical Engineers, President of Sigma Xi, and former Dean of Engineering at Columbia University. Dr. Barker will deliver an address on one of the most important problems of our time, "The Role of Management in Meeting Technological Man Power Requirements." It is most fitting that our dinner speaker will be introduced by Dr. Frank F. Bradshaw, S.A.M. National President. Dr. Bradshaw will also present S.A.M.'s Annual Awards—the Gilbreth Medal, Human Relations Award, Industrial Incentives Award, Material Handling Award, and the Taylor Key.

Supplementing the technical and inspirational content of the Conference, will be its social aspects. In addition to the Cocktail Party, a Ladies' Program has been planned, under the direction of Mrs. Harry M. Kaiser and Mrs. Bruno A. Moski. A number of activities have been planned for the ladies and the wives of registrants are invited to participate.

The Annual Management Engineering Conference has traditionally provided an occasion for the reunion of management executives and engineers from the entire country. With a strong technical program, together with the social events which have been planned, the 1956 Conference should fill the Hotel Statler.

Reservation forms have been mailed to all S.A.M. Chapters and A.S.M.E. Sections. All members are urged to register immediately, and to make their hotel reservations as soon as possible. You are requested to encourage non-members to register as well, because of the practical value of the program to all management personnel, in every community. (See Program and Registration Card on Page 3.)

With a sound technical program, inspirational addresses, social events and maximum attendance at the Hotel Statler on April 25th, 26th and 27th, the 11th Annual Management Engineering Conference is certain to become an outstanding success!

Bruno A. Moski, S.A.M. General Chairman

HUGH A. BOGLE

A.S.M.E. MEMBER

After obtaining his B.S. degree from the University of Tennessee in 1929, Mr. Bogle went with E. I. du Pont de Nemours & Company and has made his career in it. His early years at du Pont were in research and production. Since 1944 he has been doing consulting work in the Central Engineering Department, and is now Manager of the Management Engineering Section.

GUSTAVE YOUNG

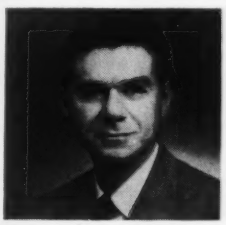
A.S.M.E. MEMBER

Now Assistant Superintendent of the Elizabethport plant of the Singer Manufacturing Company, Mr. Young is Treasurer of the New York and New Jersey Branch of the National Metal Trades Association, a member of A.S.M.E. and S.A.M., and holds his B.S. and M.E. degrees from Newark College of Engineering.

MAURICE R. BACHLOTTE

S.A.M. MEMBER

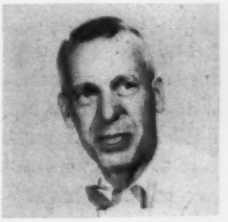
After obtaining his B.S. degree in Mechanical Engineering from the University of Florida, Mr. Bachlotte went with E. I. du Pont de Nemours & Company in 1929 and has continued his career there. He is presently Methods and Standards Supervisor of its Old Hickory, Tennessee Plant, and Vice President of the S.A.M. Southeastern Region.



A. V. FEIGENBAUM

A.S.M.E. MEMBER

Presently Manager of Quality Control and Cost Reduction for the General Electric Company, Dr. Feigenbaum has made his career in that company. After graduation from college, he joined its test engineering program, and has subsequently held posts in many phases of G.E.'s activities. He received his M.S. and Ph.D. degrees from M.I.T.



VICTOR A. GROVE

A.S.M.E. MEMBER

Chief Industrial Engineer since 1952 for De Laval Steam Turbine Company, Mr. Grove held the same position with Universal Winding Company from 1949-52. Prior to that he was associate engineer with Rath & Strong, and design engineer for the Chicago Bridge & Iron Company. He graduated in Architectural Engineering from Penn State in 1931.

What actual limitations are placed on mergers by the antitrust laws? How do these laws apply to "horizontal," "vertical" and "conglomerate" mergers? What legal factors must be given weight in considering mergers? In addition to answering such questions, some recent antitrust cases are discussed and practical advice given on clearance procedures under the antitrust laws.

Mergers And The Antitrust Laws

By Malcolm A. Hoffmann
Rosenman, Goldmark, Colin & Kaye
New York, N. Y.

THE businessman who contemplates a corporate merger soon gathers from his lawyers that the prescience of Nostradamus and the legal acumen of Louis Brandeis must combine to formulate a solid prediction of whether the planned merger is lawful under the antitrust laws. The lawyer who dramatizes the complexity of the problem through the size of his fee is not lightly to be criticized for there is no more dimly lighted corridor of the antitrust laws, with the possible exception of application of the Robinson-Patman Act, than that which lodges the meaning of the statutes, judicial decisions and administrative rulings defining whether or not mergers violate the antitrust laws. This article will serve its purpose if it lights only a dim candle to help the corporate official follow closely in the dust raised by his lawyer.

The point of departure in measuring the lawfulness of a merger is Section 7 of the Clayton Act, which by reason of a 1950 amendment bringing the acquisition of assets as well as of stock within its prohibitions is sometimes called the "Celler-Kefauver Anti-Merger Act." That Act, designed to "cope with monopolistic tendencies in their incipiency," prohibits a non-banking corporation engaged in commerce from acquiring the whole or part of the stocks or assets of another corporation where the effect of the acquisition may be substantially to lessen competition or to tend to create a monopoly in any line of commerce in any section of the country.

The prime cause for the 1950 change in law was that the old Clayton Act prohibited stock acquisitions only and was easily circumvented since the Courts had held that where the device of a statutory merger was used, or where assets only were acquired, both the Federal Trade Commission and the Department of Justice, the two enforcing agencies for the Clayton Act, were powerless to pry loose the acquisition. The Courts even had held that where an illegal acquisition of stock was followed by an acquisition of assets, the Federal Trade Commission was unable to do anything about it, so long as the assets were acquired before termination of the lawsuit relating to the acquisition of stock. As the result of early court rebuffs both the Federal Trade Commission and the Department of Justice were so discouraged that Section 7 cases were only rarely brought.

Since the Sherman Act prohibits contracts in unreasonable restraint of trade the Department of Justice has another remedy at hand to strike at a merger which harms the public. From 1927 until the present, however, only two suits were brought against mergers under the Sherman Act for reasons which are somewhat obscure to me even though I was in charge of one of them. The belief is widely fostered by antitrust scholars, and perhaps shared by Department of Justice officials, that unless the merger results in domination or monopolization of a market it does not violate the Sherman Act. Although I think this appraisal of the law is wrong, since it is so widely held the businessman with a craving for merger has little to fear from the Sherman Act unless the

MALCOLM A. HOFFMANN

After eleven years as Special Assistant to the Attorney General of the United States in the Antitrust Division of the Department of Justice, Malcolm Hoffmann is now specializing in the practice of antitrust law with Rosenman, Goldmark, Colin & Kaye in New York. He is a member of the Federal Bar Association of New York, New Jersey and Connecticut, and Secretary of its Trade Regulations Committee and a member of the American Bar Association and the Association of the Bar of the City of New York. He holds an A.B. degree from Harvard and an LL.B. from Harvard Law School. His autobiography, ***Government Lawyer,*** was published last month.

merger will result in monopoly of a line of commerce or something close to it.

In a context of little judicial or administrative resistance to mergers the Federal Trade Commission in 1948 issued a controversial report which found that a wave of corporate mergers had resulted in the greatest concentration of economic power in our history. These findings were accepted by the Committees of both Houses of Congress which favorably reported out the "Celler-Kefauver Anti-Merger Act."

ANTI-MERGER ACT APPLICATION

The Legislative History makes it clear that the Congress sought to impose a "more inclusive and stricter" test of the unlawfulness of a merger than had existed under the prior law. It did so by recourse to cloudy generalities which often seem to be the hallmarks of antitrust statutes, and, far too often, of antitrust judicial decisions. First, the statute made it clear that the acquisition of assets as well as stock is condemned. Second, it seemed to embrace all mergers within its scope: horizontal, that is, mergers among competitors at the same level; vertical, that is, acquiring backward or forward on the same line, as where a manufacturer acquires his supplier or his distributor; and conglomerate, where the merger is of companies in unrelated fields. Although the House Report tells us that conglomerate or diversified mergers were to be reached by Section 7, it is difficult to see how such a merger can, as it must, to be unlawful, substantially restrain trade or tend to create a monopoly "in any line of commerce in any section of the country." Conceivably, the bringing of the great resources of a major chemical company into the popcorn market might tend to make the popcorn of others stop popping, but in the ordinary situation the tax and business advantages of a conglomerate merger can be sought with substantial comparative impunity.

Section 7 can most readily be applied in horizontal mergers, and with slightly more difficulty to vertical mergers, but only in rare situations can it be used against the conglomerate or diversified merger.

In all merger situations consideration first must be had of what is the market in which the anti-competitive effect or purpose is to be felt, the purpose as well as the effect, since Section 7 reaches not only to felt harm but to the possibility of it. Some antitrust commentators seem to deemphasize the fact that Section 7 uses subjunctive equivalents. It condemns mergers where the "effect MAY BE substantially to lessen competition, or to TEND to create a monopoly." However, whether we are concerned with accomplished effects or with restraints in their incipiency we must first determine the appropriate market or "area of effective competition."

There has been a tremendous volume of literature written about what constitutes an appropriate market within the meaning of the antitrust laws and shorthand phrases such as the existence of "substitute products," are thought of as serious guides as to how much other business may be stuffed into the stocking before it can be called an appropriate market or line of commerce. Although corporate officials know very well what business their company is engaged in, and what business the company to be acquired is engaged in, it is surprising how much they will learn about other undreamed-of competition after even a second-rate survey of the market by their lawyer. Just as the children's Christmas stockings are stuffed from toe to hem with fruits and toys, so, too, the market must be, often with the cooperation of economists who, fortunately, from a defendant's viewpoint, are never likely to forget that every good competes with every other good offered for the consumer's dollars. Much of this discussion will end when the United States Supreme Court decides the *Cellophane* case now pending decision, where, among other things, the trial court found that opaque wrapping paper competes with Cellophane. The object of all this mental agility, of course, is to show that when you are attacked for monopolizing or substantially restraining trade in paper clips, there is no such market, since paper clips are just one of the many items in the appropriate market of objects found on a desk, and there, if you will excuse my flippancy, the company under attack is really small potatoes.

Having determined the nature of the market in which the merger is operative it becomes necessary to determine whether within that market the merger prospectively or immediately will substantially lessen competition or tend to create a monopoly. The cases and administrative rulings have not succeeded in giving us clear or consistent guides. In *Hamilton Watch Co.* v. *Benrus Watch Co.* the Court sustained a preliminary injunction barring Benrus from voting the stock which it acquired in Hamilton (24%) and which might have given it control of Hamilton's affairs. Here the market consisted of the jewelled watch industry in which of six principal manufacturers Benrus ranked fourth and Hamilton fifth. Nevertheless, the Court said that there was support for the conclusion that "control of Hamilton by Benrus * * * would have been effective substantially to lessen competition in the jewelled watch industry."

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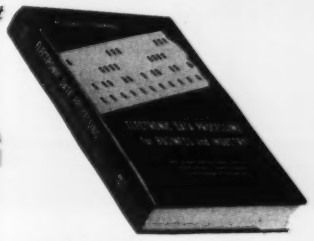

the information you need to select and use the new electronic clerical systems

ELECTRONIC DATA PROCESSING for BUSINESS and INDUSTRY

By RICHARD G. CANNING
Partner, Canning, Sisson & Associates
and Univ. of California, L.A.

FULLY explains the major "patterns" of electronic data processing systems and illustrates them by actual case studies. With knowledge of these "patterns" you are in position to evaluate the importance of the new systems in filling your own special needs. Characteristics of the systems now available and in use are thoroughly covered and a plan of action for developing a reliable system is suggested. Provides the first discussion in print of the concept of the file maintenance machine.

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The Department of Justice cleared the merger of minor automobile manufacturers but refused to approve a merger between Bethlehem and Youngstown Steel stressing the facts that Bethlehem had grown by merger (although its last acquisition had taken place 25 years before) and Bethlehem sells substantial amounts of common finished steel products in a few Mid-Continent area communities, particularly in Michigan. In both industries there were competitive colossi which dwarfed the merged companies: in automobiles, General Motors; in steel, United States Steel.

RECENT COMPLAINTS

Recently the Department of Justice sued Schenley Industries for its acquisition of 70% of Park & Tilford's stock. Schenley is one of the "big four" producers of whiskey in the United States and in 1953 it produced 22% of all domestically produced whiskey while Park & Tilford produced 4%. The complaint also noted a pattern of acquisition, charging that Schenley since 1933 acquired more than 50 companies engaged in the production or sale of alcoholic beverages.

In another complaint, brought by the United States against the General Shoe Corporation, the Government charged that a series of 18 acquisitions taking place from 1950 to 1954 violated Section 7 because their cumulative effect may have been substantially to lessen competition or to tend to create a monopoly in the production and retail sale of shoes. The Government charged that General "was one of the five leading shoe manufacturers," owning or leasing 500 or more retail shoe stores in the United States where General and other shoes are sold. In 1954 General sold over 25,000,000 pairs of shoes having a value of $135,000,000. Starting in the year 1950 General acquired 8 shoe manufacturers and 10 retailing shoe companies whose total annual dollar sales during the last years before acquisition were $67,000,000. It appeared from the complaint, therefore, that about one-half of General's 1954 sales were accounted for in the sales made by its acquired companies. The complaint, however, did not allege what percentage of the market was controlled by General either before or after the acquisition. Here, as in the Schenley complaint, reliance was placed on a series of acquisitions which may have given the acquiring company competitive advantage in substantial restraint of actual and potential competition.

The Government also sued Hilton Hotels charging that Hilton's acquisition of Statler's stock and control of Statler Hotels caused a violation of Section 7 by both Hilton and Statler "in the hotel business, including the soliciting and servicing of conventions, throughout the United States, and in the cities of New York, Washington, St. Louis and Los Angeles, specifically." Here the combination was of the two leading hotel chains in the country. Hilton, owning 15 hotels, was first in 1953 with gross revenues of $97,000,000, and Statler with 9 hotels grossed $60,000,000. Each chain prior to the merger had competitive hotels in the cities specifically mentioned. It was charged that Hilton's competitive advantage over other hotels, including those engaged in servicing conventions, may as the result of the merger have been substantially enhanced to the detriment of actual or potential competition. Just the other day this case was settled by a consent decree which required Hilton to sell only two of its hotels. The settlement, termed a "milestone" by the Department, looked more like a street-marker to me.

F.T.C. INTERPRETATION

The only important interpretation by the Federal Trade Commission under new Section 7 of the Clayton Act is *Matter of Pillsbury Mills, Inc.* There, after an F.T.C. trial examiner had dismissed the complaint, the Commission reversed, finding that the evidence tended to show that Pillsbury had acquired two substantial competitors and was the second largest American miller. The Commission examined Pillsbury's market position both in the national and southeast markets noting that its increase in its share of markets through its acquisitions was substantial, but the Commission failed to rely on any single standard as a measure of illegality. The Commission stated that, "no single characteristic of an acquisition" would "of itself be sufficient to determine its effect on competition." It believed itself bound to examine "all relevant factors in order to determine the probable economic consequences." It emphasized, as did the Department of Justice complaints summated above, the pattern of acquisitions and it also looked to the increase in the major producers' share of the market, as well as the decline in the number of mills doing business over the years, and the lack of new entries into the market. The Commissioner observed, "It was this sort of trend that Congress condemned and desired to halt when it adopted the new Clayton Act Anti-Merger provision."

NO SOLID GUIDES

We are left then without any solid guides from the Commission, the Department of Justic or the Courts as to what kinds of mergers violate Section 7 of the Clayton Act. In this obscure state of the law the Attorney General's National Committee to Study the Antitrust Laws suggested that the Court or Federal Trade Commission consider the following broad subject matters in passing upon the illegality of an acquisition under Section 7:

1. The character of the acquiring and the acquired companies.
2. The characteristics of the markets affected.
3. Immediate changes in the size and competitive range of the acquiring company and in the adjustments of other companies operating in the markets directly affected.
4. Probable long-range differences that the acquisition may make for companies actually or potentially operating in these markets.

Professor Lewis B. Schwartz points out in his dissent to the Attorney General's Committee's Report, "If the combination of Bethlehem Steel and Youngstown may be opposed, presumably on the assumption that they can survive as independents, what is the justification for a U. S. Steel twice as big as Bethlehem?"

The businessman, if he wants to risk it, can obtain clearance of his merger from the Department of Justice under a procedure instituted by Attorney General Clark in 1947. His lawyers can discuss with the Division the antitrust legality of the proposed acquisition in advance of its consummation. If he does so, his counsel may be asked to submit statements detailing the product sales of the company, estimates of total industry sales and the relative standing of the merging companies and their competitors, as well as a statement by each of the companies of the purpose for which the proposed acquisition is being made. If clearance is pursued by approaching the Department directly in Washington, a decision can generally be reached

within three weeks. That decision will take the form of a letter from the Department of rejection or approval. In the rejection letter the Antitrust Division, having determined that a violation of law is likely, will state merely that the Division will not undertake to withhold proceedings should the merger be consummated. In the approval letter counsel gets no more than a statement from the Antitrust Division that no action is presently contemplated.

Judge Stanley N. Barnes, Assistant Attorney General in charge of the Antitrust Division, who supports proposed legislation requiring clearance 90 days in advance of merger, has warned that requests for clearances should only follow a firm intention to merge and should not be used as a device for ascertaining what companies there are within the industry with whom mergers may safely be held. He also says: "Letters of 'clearance,' let me caution, are limited in effect. Initially, they speak only of the Department's present intent, for the Attorney General is authorized to give opinions only to the President and heads of Executive Departments; he may give no legal advice to private parties. Accordingly, his 'clearance' may lawfully be reversed by him or his successor. Prime comfort from 'clearance' stems from the prospect that no immediate proceedings are likely to follow." The letters sent by the Department of Justice are kept confidential and not made public in any way.

OBTAINING CLEARANCES

It is also possible to obtain a clearance through the Federal Trade Commission where the Director of the Bureau of Investigation, if satisfied that he has been supplied with all relevant facts, will write stating that the F.T.C. staff is not interested on the basis of the facts supplied in proceedings under Section 7. Where the Commission is dissatisfied with the merger it will write stating that if the merger is consummated proceedings will be instituted.

There is considerable cooperation between the F.T.C. and the Antitrust Division on clearances of mergers, and the writer knows of no instance where after a company has received clearance from either the F.T.C. or the Department of Justice the other agency has proceeded against the merger. The question of whether or not mergers should be cleared prior to consummation is generally resolved by antitrust lawyers in favor of clearance. Where large companies are involved and where the law is obscure, as the description found above demonstrates, most corporate officials are unwilling to consummate a merger at the peril of litigating its validity for years to come. The litigation itself is disruptive of the corporation's effective existence and always fraught with the possibility of defeat. In the event of defeat each merging company may be divorced from the marriage and emerge with highly confidential information concerning the corporate affairs of the other.

Where, however, you are determined to merge without Government blessing the best thing to do is to merge as quickly and as unobtrusively as possible, and it may be safer not to request clearance if the merger suggests a borderline case to your counsel. In such a case if clearance has been sought and denied and the companies then defiantly merge, either the Department or the Federal Trade Commission will find it imperative to sue, even though ultimately the litigation might prove unsuccessful. However, where a borderline acquisition is not presented for clearance it is likely for various reasons that no action may be taken against it. One may be that there are other cases of similar character which would constitute better vehicles for test cases. Another may be that preemption of Government manpower in more important matters makes this case inadvisable.

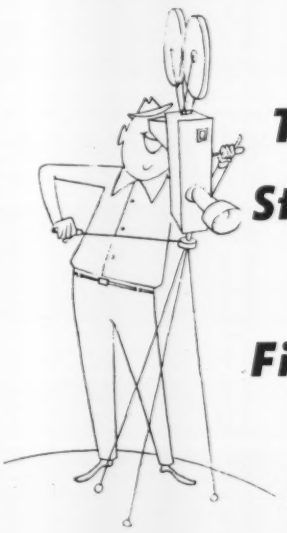
CHANCES FOR APPROVAL

It is most unlikely, however, that the merger will pass unnoticed by either the Antitrust Division or the Federal Trade Commission since both, as a matter of routine, attempt to make at least a cursory check of all mergers, using clipping services and other ready sources.

Your chances of success in getting a merger approved seem to be good. Although no public statistics have been issued, knowledgeable antitrust lawyers feel that about half the mergers submitted to the Department of Justice for clearance have been approved.

The presentation to the Department or the F.T.C. requesting clearance can be made prior to any formal contract and should be both full and frank. Your counsel should be able to show affirmative benefits to competition resulting from the merger. If that showing does not impress you, it may be best to forget the whole idea. ■

S.A.M. Rating of Time Study Films



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New Management Writing . . .

THE GOLDEN BOOK OF MANAGEMENT

An Historical Record of the Life and Work of Seventy Pioneers. Edited for the International Committee of Scientific Management (CIOS) by L. Urwick. Publisher, Newman Neame, Limited, London, England, 1956. 298 pp., $6.50. Distributed by Society for Advancement of Management.

A VOYAGE of rediscovery can be quite as exciting as one of discovery. In the perusal of "The Golden Book of Management," I have just completed one that has elements of both. Here are arrayed the stories of seventy pioneers of management in eleven countries, on four continents. To travel in their company along an historic path, tracing the genesis, growth, acceptance and development of management as an art, as a science, and as a vital force in the economic and social maturation of our era is a privilege accorded us through the vision, the erudition, and the tireless devotion of the editor of this book, Lyndall Urwick.

Urwick came to his task better equipped probably than any other person who could have been chosen. Indeed, it was almost providential that one so uniquely qualified could be found willing to undertake, on an honorary basis, an assignment so arduous and time consuming. His long association as director of the International Management Institute of Geneva, his secretaryship of the International Committee of Scientific Management, his chairmanship of the British Government Committee on "Education for Management," and of the Anglo-American Productivity Team to the United States on "Education for Management," followed by his investigation, under the auspices of the American Management Association, of "American Management Education for Itself and for Its Employees"—these are only a few of the background connections which fortified him for the undertaking. Chiefly, there is the fact of his long studies in the fields of administration and management, his authorship of an extended list of contributions to many facets of these fields, and, above all, his writing, in collaboration with E. F. L. Brech, of the three-volume work, "The Making of Scientific Management."

It was not Urwick's purpose to write a history of management, but, as Emerson said, "there is properly no history, only biography." And so, by the very selection of the names for inclusion, by their arrangement in chronological rather than in alphabetic or national order, but more by the binding element lent by his own perspective and commentary, he has in a sense done so. To be sure no living persons are included, and to that extent the history is necessarily incomplete. Moreover, as he himself recognizes, "it would be surprising if the choice of names commanded unanimous approval."

Actually, the choice was made "in collaboration with small committees composed of persons of long-standing eminence in the management movement of each country," and the nominations were subsequently endorsed by the International Committee of Scientific Management, under whose auspices the book was planned and issued.

It is probably on the matter of selection, if at all, that any controversy concerning the book will arise. Some may question whether it is justifiable to feature such precursors of the management movement as we know it as Watt, Boulton, Owen and Babbage. Others may disagree with the inclusion of certain more modern names, or, particularly, the omission of some they hold in esteem. This is inevitable. Questions of priority are elusive, and assessment of merit defies unanimity of opinion. The best one can hope to do is to set up criteria and hew to the line, focusing a unified viewpoint on it. In this case the criteria of selection were: Persons who have made original and outstanding contributions to the world body of knowledge about the subjects of management or administration, and who have left a record of published work on a management subject. Service to the management movement in the individual's own country or to the international management movement are among the grounds for inclusion. No person living at the beginning of the year 1955 (when the manuscript was ready for press) was included.

For each person selected, the biographical sketch gives: a portrait or photograph; the reasons for inclusion; the main facts of his career; a note on his personal characteristics, and the titles of his most important written works on the subject of management, this last constituting an invaluable bibliography. All entries are necessarily brief, generally covering three or four pages. In this space is concentrated a wealth of information which will serve the student of management, the teacher, the engineer, the industrialist, the economist, the historian and the librarian, and which makes fascinating reading for all who have an interest in the changes that have been wrought in business organization and management, particularly during the past sixty years.

Of special interest to readers in this country will be the biographies of men in so many other lands whose thought and work in many cases preceded or paralleled those of our own pioneers, either enlarging the body of management knowledge or popularizing it among their countrymen. Thus, anticipating the birth of scientific manage-

THE GOLDEN BOOK OF MANAGEMENT

A historical record of the life and work of seventy pioneers in scientific management. Edited by Lyndall F. Urwick for the International Committee of Scientific Management. (See book review on this page.)

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ment in the United States by nearly a century, the use of production planning, process and operating standards, standardization of product, control records, division of labor and payment by results, among other management tools, were found in the Soho Foundry of Boulton, Watt and Company. It was only shortly later that Robert Owen introduced into his New Lanark textile mills personnel practices which we are apt to regard as modern. And it was he who first made the familiar comparison between the care given to machinery and the lack of care bestowed on the worker: "If then, due care as to the state of your inanimate machines can produce such beneficial results, what may not be expected if you devote equal attention to your vital machines, which are far more wonderfully constructed?"

EARLY LEADERS

Here we find the story of Adamiecki, the great Polish engineer, who formulated principles of organization and the theory of "harmonization" which set out a law governing the planning and control of teamwork in production. Working at the same time as Taylor, but entirely independently, he developed a theory, general principles and techniques which "follow the same lines that Taylor laid down for scientific management" and that led to increases in output of between 100% and 400%.

We see the Michelin brothers in France who, by the turn of the century, were applying in their own tire business, "methods very near to the principles of scientific management, although the work of Taylor was as yet unknown to them." And in Belgium, we learn that Ernest Solvay in his writings in the early years of the century made "an astonishingly modern exposition of the need for productivity," a concept and a term which only recently have become a part of our own thinking.

The book is a good antidote for insularity or smugness on the part of any Americans who think that in management all progress and wisdom have flowed from this side of the Atlantic. It reflects the breadth of management, both in the sources of its materials and in its applications: the first by stressing the contributions made by leaders identified chiefly with other disciplines such as psychology, exemplified by Sollier (Belgium), Münsterberg (U. S.), Myers (England) and Muscio (Australia), and social philosophy by Mary Follett (U. S.) and Elton Mayo (Australia and U. S.); the latter by demonstrating its influence on statecraft and governmental administration through the biographies of Rathenau (Germany), Streeruwitz (Austria), and Oliveira and Ribeiro (Brazil).

Should it be asked what manner of men are these who have left their stamp on management at home and abroad during the past seventy years, the answer would not be entirely simple. They could hardly be expected to be cast in one mold: they are all manner of men. They come from such far-flung countries as the United States (32); Great Britain (13); France (6); Germany (5); Belgium (4); Brazil (3); Australia and Switzerland (2 each), and Poland, Austria and Italy (1 each). The large majority of them were engineers, as is to be expected, but among them are found economists, accountants, psychologists, industrialists, educators, chemists, lawyers and statesmen. There are men born to wealth and position and men of humble origin; men with long formal education and many academic degrees, and men self-taught, who started to work as boys; dynamic men and retiring; urbane and forthright; temperamental and stolid. But all have some characteristics in common, notably great energy, industry and enthusiasm; a love of work and a passion for accomplishment; generosity in sharing the results of their labors; qualities of leadership and influence over others; a spirit of dedication to the science of management, and a zeal for spreading the benefits they were convinced it could confer upon humanity.

PERSONAL TRAITS

How often in the section devoted to "Personal Characteristics" recur such phrases as these: "a perfectionist in work, almost an artist"; "energy and imagination"; "infinite thoroughness"; "devoted most of his waking hours to work"; "preferred making a pleasure of duty to making a duty of pleasure"; "balanced outlook"; clarity of thought"; "perfect loyalty and integrity." Yet these were not stodgy, humorless men. Far from it. Preponderantly they were creative, magnetic, warm, friendly, genial, and often witty and charming, according to the accounts of their friends.

To many in this country and in the world, some of the figures comprised in this notable galaxy have long been familiar. Only a very much smaller group is aware of them all. That the stories of their achievements should have been collected and evaluated, that in some cases their memories should literally have been rescued from obscurity to take their places among the contributors to the great and growing body of knowledge that we recognize today as the science of management, is a timely accomplishment and a lasting addition to the literature of the field. For it the whole management movement is indebted to the initiative of the International Committee of Scientific Management, to the interest of its Past President, Harold C. Maynard, to the small but devoted staff of Col. Urwick and to his many collaborators in the several countries, but primarily to himself.

It is to be hoped that this book will be the forerunner of others, at reasonable intervals, so that there may be preserved a continuity of record of those who follow in the line of this inspiring group of pioneers whose work has made this world a better place in which to live. ■

Rita Hilborn Hopf
Formerly Vice President
Hopf Institute of Management

CHAPTER PERFORMANCE AWARDS REPORT

For Period of
July 1, 1955-December 31, 1955

Providence	5444	Twin City	3401
Lancaster	5136	Saint Louis	3396
Hudson Valley	5049	Alabama	3357
Knoxville	4884	Dallas	3239
Bridgeport	4690	Lehigh Valley	3168
Greensboro	4647	Richmond	3062
New Haven	4645	New Orleans	2927
Indianapolis	4557	Clearing	2969
Cleveland	4481	Worcester	2683
Wilmington	4476	New York	2682
Western N. C.	4421	Baltimore	2679
Philadelphia	4369	Montreal	2410
Raritan Valley	4327	Madison	2175
Nashville	4313	Portland	2149
Chicago	4308	Western Mass.	1538
Boston	4305	Central N. Y.	1512
Northern N. J.	4170	Central Pa.	1423
Tren.-Del. Val.	4158	San Francisco	1410
Milwaukee	3915	Georgia	1028
Northeast. Pa.	3881	Detroit	624
Greenville	3844	Athens	
Columbus	3814	Calumet	
Pittsburgh	3813	Charlotte	
Kansas City	3804	Cincinnati	
Binghamton	3801	Dayton	
Washington	3647	Fox Valley	
Sacramento	3616	Hartford	
Los Angeles	3611	Northern Ala.	
Reading	3608	Stamford	

Does management in 1956 differ greatly from management in 1936? What business factors have changed during that time? How have managers reacted to the new environment? Are we on the verge of a new kind of management?

The Last Twenty Years In Management

By B. E. Goetz

Professor of Industrial Management
Massachusetts Institute of Technology
Cambridge, Massachusetts

THE explosive developments of the past two decades have profoundly altered the conditions and the tasks of management. The purpose of this article is to review the more significant of these changes and to appraise the responses of management to its rapidly changing environment.

Today the Federal Government is committed to an attempt to so manage the whole economy as to avoid major depressions. In 1932 there was no such commitment—none at all. The Federal Government was neutral. It, and the local governments, prohibited violence, made some small effort to keep markets free, and enforced contracts. Now the medium of exchange is manipulated through changing reserve requirements, changing rediscount rates, and open market operations; governmental taxation and spending policy is geared to prevent sagging of the economy; and sources and amounts of credit available are controlled by subsidy and regulation. All this is relatively new, and a major factor in the environment of today's management.

While it is probably still too early to predict that there will be no more depressions, certainly future depressions, if any, will be radically different from any we have ever experienced in the past. The Federal Government, under Democrats or Republicans, is committed to act promptly and drastically. At the very least, we can expect tax abatement, public works, and pump priming on a gigantic scale to maintain employment, prices, and, perhaps, profits.

During World War II, a tremendous experiment was undertaken in large-scale management of the whole economy via a whole alphabet of regulatory agencies. The system of price fixing, rationing, and priorities dominated practically all managerial thinking; and vestiges (stockpiling for example) still remain. Besides coping with these conditions as managers of private enterprises, many managers went to Washington and actively participated in designing and conducting these experiments. Today many are back in private enterprise with many new and bigger, if not necessarily better, ideas than managers ever had before.

From the time of Alexander Hamilton, the Federal Government has encouraged many industries by a system of protective tariffs. Later came the encouragement of railroad building via prodigious land grants—strips a mile wide from the Missouri to the Pacific. Perhaps least defensible is the silver subsidy whereby silver with an American birth certificate commands a premium over the world silver price. Then came the airlines' subsidies and a vast number of defense contracts with virtual guarantees of profits. Finally, we have the unsolved problem of farm surpluses, with high support prices promising to perpetuate the problem to avoid the painful solution via free markets and an impoverished segment of the agricultural population. While tariffs and land grants and subsidies show that this type of management of the economy is not so new, each of these represented a specific attempt to encourage a particular industry. What is relatively new is the attempt to manage the whole economy by large-scale manipulations of this kind: stock piling, ever-normal granaries, price supports, easy credit—the list is long and the items of heroic proportions. The Federal Government seems now committed to support any large distressed segment of the economy.

B. E. GOETZ

Professor of Industrial Management at M.I.T.'s School of Industrial Management, Billy E. Goetz has also taught at Antioch College and Illinois Institute of Technology, and worked for Sessions Engineering Company and James O. McKinsey & Company. He received his Ph.D. degree from the University of Chicago, is author of the book, "Management Planning and Control," and is a Fellow of S.A.M., having served as President of both its Chicago and Dayton Chapters.

While substantial volumes of economic statistical data were available in 1930, the vast increase in available data since that time constitutes a new dimension of management's environment. The concept of the national income accounts has reorganized much of economic thinking, and has produced an attempt at a systematic structure of statistical data to portray the whole economy. Previously, economic data had been a growing mass of unrelated, piecemeal facts and trends. Now they are an organized effort to picture the whole economy in action.

BUSINESS FORECASTS IMPROVE

This has involved an immense increase in published data concerning production, prices, inventories, shipments, employment, etc. of a vastly larger number of industries and commodities. A growing body of consumer market studies and other privately gathered and compiled data adds to the available background material for forecasting business trends and for determining the relative position and change in position of an enterprise in its industry. The change in quantity and quality of such data is so large as to constitute a change in kind.

Twenty years ago, few companies employed economists or attempted elaborate forecasts of markets. Today most large companies do, and some maintain staffs of dozens of economists. And, in response to the new theories and immensely larger amounts of data available, economics has gone quantitative, mathematical, statistical. Managements have become concerned with regression lines, correlation coefficients, frequency distributions, and estimates of confidence.

While feeble attempts at labor organization run far back into history, it was section 7B of the National Recovery Act of 1933 and its successor, the Wagner Act, that brought the large-scale industrial unions to the mass-production industries. Before 1933, many managements could and did largely ignore both unions and employee relations. This is no longer possible. The unions have grown too large and powerful to be ignored. Federal law provides for elections and certification of successful unions as sole bargaining representatives for all employees in a plant, and it makes mandatory negotiating "in good faith" with this representative.

Negotiating from their new positions of strength, the powerful unions have invaded one managerial sphere after another, challenged one "managerial prerogative" after another. They find nothing sacred. Simple bargains about wages have expanded to the systematic organizing of wage structures through mutually developed and installed programs of job evaluation. These have been further elaborated through negotiation of incentive plans based on jointly determined time standards and jointly determined formulas for converting performance into compensation, of second and third shift premiums, of overtime and holiday premiums. Hour negotiations have broadened beyond fixing the standard work week to include opening and closing times of each shift, rest periods, and cleanup time allowances. Working conditions and safety precautions have become elements of the labor contract, and open almost anything that can occur to the grievance procedures stipulated in the agreement. Unions have made tentative approaches to claiming a negotiable interest in promotion policies, sales policies, and financial policies. They insist on a voice in determining the location or relocation of plants. This union interference on so large a scale with what were twenty years ago exclusively the prerogatives of management is a new and powerful factor in all of management's plans today.

NEW MANAGEMENT CONCEPTS

Concurrently, the Hawthorne experiments added sociology to engineering, economics, accounting, law, statistics, and psychology as necessary tools, as the basic sciences, of management. Through the external pressures of expanding size and functions of unions, and the new enlightenment of management via psychology, sociology, and industrial anthropology (whatever that may turn out to be) managements have gone in for decentralized (divisional) organization, for consultative management, participative management, multiple management, "bottom-up" management, employee counseling, etc. And, on the present scale, this is something new—a new dimension to managerial analysis—and little understood as yet among managements.

The captain of industry has occasionally taken upon himself a sort of feudal responsibility for the welfare of his subjects, e.g., Robert Owen at his New Lannark mills around 1850. Many companies provided housing for employees and company stores at which credit was freely granted—and both houses and stores were more frequently scandalous than otherwise. But by and large industry took little responsibility for the welfare of the community. Plants were dreary, dirty places. Waste products polluted streams and air. Industrial communities were noted as centers of all the vices: gambling hells, drunkenness, prostitution, mayhem, and murder.

Today virtually all new plants are designed and landscaped to make their communities more attractive rather than less. Elaborate and expensive means are employed to minimize stream and air pollution. Companies contribute money and time to community welfare. They are the sources to which colleges, churches, and community funds turn for funds and manpower.

COMMUNITY ACTIVITIES

A payroll clerk in a steel company south of Chicago noticed and reported that 75 percent of all cancelled payroll checks bore the endorsement stamp of a notorious gambling den. This triggered an investigation. The company called in a professor of sociology to survey the community, determine its needs, and suggest ways in which the company could discharge its responsibilities as the financially most competent citizen of the community. The investigation disclosed that all managerial employees lived in the suburbs—they couldn't send their children to the inadequate city schools. The city administration was corrupt, taxes were high, municipal services were almost non-existent. Employees were encouraged to move back into town, to participate in community activities, to run for school board and city council. The company increased its contributions to community projects, and allowed employees to solicit for community chest and Red Cross on company time.

This kind of revolution in managerial thinking about their companies' responsibilities as citizens has been going on all over America, and is one of the most important of the new dimensions of today's management.

Technological advance is, of course, an old story. Paleolithic man harnessed fire, and made and used hand tools. Neolithic man domesticated plants and all of the present domestic animals (it appears odd that modern man has not added to the list), wove cloth, pro-

duced pottery, polished stone, and became an artist. In general, there seems to be an underlying secular increase in the rate of technological progress; and there seem to be humps in the trend line. One such hump was the Industrial Revolution from about 1776 to around 1850 during which the machine tools were invented and rapid industrialization became possible.

UNIVERSAL AUTOMATION

We seem to be living in another such period. A hundred and fifty years ago, cams were built into a lathe to create an automatic screw machine. About the same time completely automatic flour mills were constructed. By 1812, Whitney's system of interchangeable parts was developed, and soon was widely applied to many industries in this country. About a hundred years ago, a punched tape was used to control the Jacquard loom. The precursors of the current technological revolution were appearing piecemeal, as isolated developments here and there.

The "brain wheel" of the automatic screw machine has been vastly supplemented by electronic control systems. The punched tape of the Jacquard loom and the player piano has been applied to sorting, tabulating, and calculating equipment, and has been supplemented by magnetic tapes; and both are being fed into computers and into machine tools. Automation is being conceived in new terms—automatic processes and factories, almost universal automation, instead of an occasional automatic machine here or there. The idea is being systematically instead of sporadically applied to industry. Perhaps most characteristic and most significant are applications to data processing and to communication since these tie in so closely with the other new factors we have noted above.

While the tendency to substitute capital investment, indirect labor, and round-about production for direct labor is old, the new scale threatens to all but eliminate direct labor. Costs are tending to become more fixed and less variable. High levels of utilization of large aggregates of capital equipment and of a permanent labor force of skilled designers and repairers of complex automatic equipment is likely to become a veritable obsession of managements. Old ideas of proportions of direct to indirect labor can finally be laid to a long overdue rest.

While the East India Company could match many modern giant corporations as to size, complexity, and geographic range of activity (it maintained an army and a navy and conquered a subcontinent), it was one of these exceptional precursors we have so often noted in other connections. Here, again, a long-time trend seems to have entered a period of violent acceleration. Since the Second World War, many companies, including many of the giants, have doubled in size, and doubled again. There has been a new wave of mergers, a new emphasis on diversification, and a staggering succession of expansion programs. With this has come the current emphasis on divisional organization as a means of keeping the management problems within the capacities of the men who must deal with them.

Until around 1870, a persistent sellers' market kept emphasis on output. In this country, the railway net was built and all industry expanded almost explosively to supply what seemed to be an insatiable market. About 1870, production began to overtake demand, and attention began to shift to marketing and to cost reduction and control. Around 1888, Frederick Taylor began his long series of experiments that led to his papers on the science of management published from 1895 to about the time of the First World War.

Taylor and his disciples began the managerial revolution just as Wilkinson, Watt, Maudsley, Whitworth, and their disciples had inaugurated the industrial revolution about a hundred years earlier. Taylor and his group were unwilling to rely upon traditional rules of thumb handed down via apprenticeships from generation to generation of workmen. They did not trust workmen's impressions and opinions. They emphasized measurement. What factors really determined the rate of production? They used an experimental approach: try all possible ways under controlled conditions and see what comes out. Measure everything that goes in, everything that comes out; keep all inputs constant but one, deliberately vary that one by measured amounts, and measure the outputs. Transfer "know-how" from workers' skills to managers' scientific knowledge.

A MANAGERIAL REVOLUTION

This "scientific management movement" introduced into manufacturing: methods simplification, time study, standard practices, production scheduling, functional organization. Taylor's eight functional foremen have blossomed into whole departments: planning department, methods department, time study department, personnel department, maintenance department, inspection department (the other two correspond to today's set-up men and foremen). All of these were non-existent or excessively rare before Taylor. All are commonplace today.

Nor did these pioneers stop with the concepts, they invented many of the techniques. Taylor was concerned with selecting the right man for the job, training him in the right way to do it, and motivating him. Gilbreth introduced motion elements (which he modestly named therbligs), micro-motion study using motion picture equipment, and works councils to give workers representation and to bring their ideas and attitudes to management. Gantt worked out charting procedures to give faster and more effective controls over planning and performance. Taylor made methods studies, fatigue studies, and time studies. They made flow charts for procedures analysis and flow diagrams for plant layout improvement—nearly every concept and technique now widely used was explored and worked out by these pioneers.

SCIENTIFIC MANAGEMENT

The period between the World Wars was largely a time of consolidation, refinement, and elaboration of this work. Even today, few companies utilize all of these methods, techniques, and concepts at anything approaching optimum levels. But nearly all companies now use at least some of them—or abuse and misuse them! Most managements know much more about them than they use. Engineering and business management texts and curricula are loaded with them. Skill, knowledge, and caution are needed in application. A mangled installation tends to discredit the basic concepts and to make subsequent effective installation much more difficult. By and large, the components of "scientific management" should be approached with care and thoroughness. They should be used correctly or let alone; e.g., a poorly conceived or executed program for job evaluation or for merit rating can raise holy hell! Perhaps the safest approach is an explicitly experimental approach in which managers and employees both participate,

both seeking improved methods and relations.

What might be regarded as the Taylor school or philosophy of scientific management reached its acme during and after the Second World War. The establishment and use of standard element times for methods improvement, cost estimating, scheduling, and determining satisfactory rates of production reached new heights in such synthetic time systems as Methods-Time Measurement, Work Factor, and some sixteen others. Here is the present epitome of preplanning. Similarly, the Training Within Industry programs for Job Instruction Training, Job Methods Training, and Job Relations Training represent a logical outcome of the Taylor philosophy of human relations. Both are useful and important, and both are recent developments (the last twenty years again!) capping a fifty-year trend.

GREAT CHANGES BEGIN

In today's world of electronic computers, digital and analog, vast areas of management are undergoing a second "scientific revolution", somewhat more rigorous and scientific than the first. Without abandoning the advances and techniques of the Taylor school, the very new in management tends strongly towards a mathematical form. Instead of handling independent variables one at a time by freezing all others while manipulating the one according to a predetermined plan, modern scientific management handles its input variables in batches, obtaining control by standardizing a few, randomizing others, and separating the remainder by statistical techniques. Central roles are played by economic marginal analysis and statistical probability theory.

Some of the names under which greater or lesser parts of this movement go are: statistical quality control, linear programming, operations research, Monte Carlo technique, theory of games, analysis of variance. These names are neither mutually exclusive, exhaustive, nor always clearly defined. Nor have they yet been fused into a single coherent structure. But they have given promise of their power. We are on the edge of a new management characterized by greater precision in its concepts and by a more inclusive range of the factors it takes into account. It tends to solve each minor problem in terms of the whole picture in a way that has hardly been approached before. ■

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APRIL CHAPTER ACTIVITIES

CHAPTER	SUBJECT	SPEAKER	TITLE	PLACE	DATE
Alabama	The Role of Government in the Field of Labor-Management Relations	Joseph F. Finnegan	Director, Federal Mediation and Conciliation Service, Washington, D.C.	Tutwiler Hotel	10
Baltimore	Plant Tour—and Roundtable Discussion on the problems of measuring and applying quality control and production planning for a manufacturer of small electronic equipment			Instrument Div., Bendix Friez	18
Binghamton	Automation	C. F. Hautau	V.P. and Treasurer, Hautau Engraving Co.	Arlington Hotel	11
Boston	Factors in Office Management	Willard Gardiner	Industrial Engineer, Sears Roebuck & Co.	Faculty Club, Sloan Bldg., M.I.T.	5
Bridgeport	Value Analysis	L. D. Miles	General Electric Co.	Algonquin Club	3
Chicago	Significance of the Human Factor	Robert L. Kahn	Director, Institute of Social Research, University of Michigan	Furniture Club of America	24
	Seminar — Industrial Engineering			Furniture Club of America	10
	Report of Operations Research Section Project	Robert Arndt	Edward Valves, Inc.	Hardings Presidential Grill	3
	A discussion concerning the morale of the Chicago area employees, with respect to wages, fringe benefits, and working conditions			Abbot Hall, Northwestern U.	2
Clearing	Problems of Mental Health in Industry	Dr. R. Worthington	Worthington & Associates	Industrial Clearing Club	18
Cleveland	The Human Element in Cost Reduction	Allan H. Mogensen	Consultant — Work Simplification and Industrial Management	Lake Shore Country Club	2
Columbus	Cost Controls—Budgets and Planning Methods	Robert D. Altmaier, Chairman		Hotel Fort Hayes	12
Dallas	Discussion of Operations Research	Mark C. Lewis, Leader	General Electric Co.		11
Dayton	Management Development	Herbert L. Myers, Jr., Chairman			24
Detroit	What's Wrong With Engineering?	William Cavanaugh	Director, Engineering Manpower Commission, New York City	Engineering Society of Detroit	30
Georgia	New Horizons for Today's Executives	Robert E. Gross	Chairman of Board & President, Lockheed Aircraft Corp., Burbank, Calif.	Briarcliff Hotel	19
Greensboro	How To Sell Your Ideas	Phil Carroll	Professional Engineer	Starmount Country Club	10
Greenville	Corporate Financing	K. W. Fraser	Financial V.P., J. P. Stevens Co., Inc., New York	Elks Club	11
Hudson Valley	A Data Processing Center	L. C. Guest, Jr.	Controller, Sylvania Electric Products, Inc.	Hendrick Hudson Hotel	3
	Preventive Maintenance	Radcliff Taylor, Chairman	Cluett Peabody & Company	DeWitt Clinton Hotel	19
Kansas City	Pre-determined Variable Set-up of Methods and Standards	D. A. Drewery	Plant Industrial Engineer, Harnischfeger Corp.	President Hotel	17
Knoxville	"Supervisory Training" or "Community Relations"	John R. Suman	Vice President, Standard Oil of New Jersey, New York, N. Y.	Holston Hills Country Club	10
Lancaster	The Royal Pay Dirt in Paperwork Simplification	Ben S. Graham	Director, Methods Research, The Standard Register Company	Lincoln Woods, York	17
Madison	Creating Cost Consciousness	Robert Hood	President, Ansul Chemical Co., Marinette		11
Milwaukee	Developing Indirect Standards	L. D. Bentley	Executive Manager, Huebsch Mfg. Co.	E.S.M. Bldg.	12
Montreal	Using M.T.M. To Control Labor Costs	B. D. McAuley	V.P., Stevenson & Kellog Ltd., Toronto	Ritz-Carlton Hotel	11

APRIL CHAPTER ACTIVITIES — (Continued)

CHAPTER	SUBJECT	SPEAKER	TITLE	PLACE	DATE
Nashville	Financing in Small Business	Fenton A. S. Gentry	President, Southern Fire & Casualty Co.	Andrew Jackson Hotel	12
New Haven	Cost vs. Industrial Engineering	John Dlevecz	Chief Cost Accountant, Pratt-Reid Co.	Colonial House, Hamden	19
	Roundtable — Industrial Photography	Florian Fox, Discussion Leader		Chamber of Commerce Board Room	10
New Orleans	Lease vs. Buy	Panel Presentation		Roosevelt Hotel	20
Northeastern Pennsylvania	Industrial Engineers' Sales Activity	Harry T. Schwan	V.P., Methods Engineering Council (Pitts.)	Hotel Sterling	2
Northern New Jersey	Ladies' Night			Essex House	19
	Plant Visitation			Budweiser Brewery	3
Philadelphia	Some Aspects of Personnel Director's Activities Other Than Collective Bargaining	E. H. Weigle	Ass't. V.P. of Personnel, Bell Telephone Company of Pennsylvania	Poor Richard Club	3
	Plant Visitation			Piasecki Aircraft	19
Pittsburgh	Techniques of Management Consulting	Harold B. Maynard	President, Methods Engineering Council	Gateway Plaza	19
Portland		Mr. Covington		The Broiler	25
Providence	Obtaining Employees Acceptance of Methods, Changes and Standards	Harold L. Roat	Master Mechanic, AC Spark Plug Div. of General Motors Corp., Flint, Michigan	Brown Refrectory	5
Raritan Valley	Plastics Production	A. A. Boehm	Production Superintendent, Bakelite Co.	Bakelite Company, Bound Brook, New Jersey	18
Sacramento	Measuring Management Effectiveness	John G. Neukom	Managing Partner, McKinsey & Co., San Francisco	Capitol Inn	3
St. Louis	Student Chapter Review—1955-56 Season	B. Purcell, Chairman		Washington University	23
Trenton-Delaware Valley	Panel on New Industrial Engineering Techniques			Hotel Hildebrecht	17
Twin City	Industrial Relations Conference			University of Minnesota	3 & 4
Washington	Automatic Systems for Office Work	Robert B. Curry and Charles Philipps—Co-Chairmen		Lafayette Bldg., Room 1143	11
	Recent Management Research Developments	Lowell H. Hattery, Chairman		G.S.A. Bldg., Room 5139	12
	Program Budgeting	Oscar Disler and Robert H. Brinkmeyer, Co-Chairmen			10
	Work Measurement, Simplification and Stds.	R. K. Friedman, Chairman		Rm. 5041, Post Office Confer.	25
	Management of Research and Development Activities	Everett H. Breed, Chairman		Na. Science Foundation	11
	Scientific Management in the Home	Mrs. James F. Grady, Chairlady		Lafayette Bldg., Room 1143	9
	Management Problems in Overseas Activities	Thomas R. Wilson and Herman Granger, Co-Chairmen		Foreign Service Institute, Room 200	26
	Financial Management	Everett H. Breed, S.A.M. Rep.		G.A.O. Auditorium	24
Western Masachusetts	Standardization in Design—Cost Reduction and Its Source	John Kapinos	Chief Engineer, Package Machinery Co.	Ivy House	18
Western North Carolina	Automation in the Factory	Damon Van Utt	Bruce Payne Associates	George Vanderbilt Hotel	18
Wilmington	Information Theory: Foundation of All Business Communications	Dr. Peter Elias	Professor, M.I.T.	Lord De La Warr Hotel	10
Worcester	Management's Developments in Foreign Countries	A. Donald Kelso	President, Norton Co.	Norton Company	16

Note to Program Chairmen: **For your Chapter's activities to be listed in this Chapter Activities Chart, you must submit your program of year's meetings and activities for the Emerson Trophy Award. Address your program submission to: Emerson Trophy Award, Society for Advancement of Management, 74 Fifth Avenue, New York 11, N. Y.**